OHIO STATE UNIVERSITY
MAY 7 1930
LIBRARY

FIRE ENGINEERING

A consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

The Journal of the Fire Protection Profession

APRIL 30, 1930

Eureka Fire Hose Manufacturing Company
50 CHURCH STREET, NEW YORK CITY
ATLANTA BOSTON CHICAGO COLUMBUS DALLAS DENVER DES MOINES DETROIT
KANSAS CITY LOS ANGELES MINNEAPOLIS NEW YORK PHILADELPHIA [redacted] SYRACUSE

ESTABLISHED 1877 PUBLISHED SEMI-WEEKLY

SAFETY...

...a feature of the *new* MASTER SERIES APPARATUS

Four wheel brakes stop the Metropolitan, for example, within 25 feet at a speed of 20 miles an hour...ten feet shorter than the most stringent highway regulations.

Pressed steel, heat-treated frames are the finest and strongest frames used on fire apparatus today.

Hollow spoke, cast steel wheels combine lightness with *ten times* the strength of wood spoke wheels.

Shackles on the front end of forward springs eliminate all steering wheel fight, on any road, at any speed.

***Safety*, the sum of these and many other engineering achievements, is a feature of American-La France Master Series Apparatus.**

Of course, the Master Series embodies the dependability and long life that have made American-La France Apparatus the choice of 90% of American cities...For complete information on the Master Series...pumpers, aerials or city service trucks...write American-LaFrance and Foamite Corporation, Dept. A58 Elmira, N. Y. *Offices in all principal cities.*

LA FRANCE AND FOAMITE PROTECTION
AN ENGINEERING SERVICE
AGAINST FIRE

THE LIFE OF YOUR HOSE DEPENDS on the INTEGRITY OF ITS MANUFACTURER

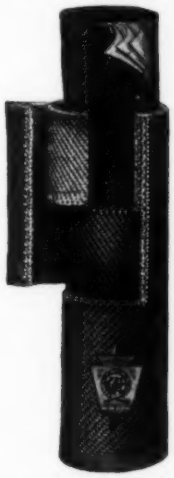
FABRIC

Wax & Para Gum Treated Cotton Rubber Lined

FIRE HOSE

THERE are many points of importance in the manufacture of good fire hose; points that demand care and the greatest skill. Here in our factory among the Connecticut hills are gathered a personnel of capable executives and workmen who's job is to see that you get dollar for dollar value out of Fabric Hose.

The mechanical process used in the manufacture of our hose is a process worthy of note if you buy hose from which you expect *exceptional service.* The threads are wax and para gum treated before they are woven, thereby insuring uniform toughness and absolute resistance to weather and water. *Fabric Hose will not rot — it is mildew-proof — pliable, strong and durable.*



The wonderful acceptance of Fabric Hose by thousands of chiefs over a half century is gratifying evidence of the quality they get out of it. Fabric Hose will continue to be manufactured with sterling integrity. You can recommend and buy it with that thought in mind. *Write for our booklet* "Fire Hose and How It Is Made."

FABRIC FIRE HOSE CO.

9-15 Park Place, New York, N. Y.
124-126 W. Lake Street, Chicago, Ill.

Atlanta	Columbus	Binghamton	Minneapolis	San Francisco	Newark
Boston	Dallas	Baltimore	Portland (Ore.)	Los Angeles	Pittsburgh

Kindly mention FIRE ENGINEERING *when writing advertisers.*

The Journal of the Fire Protection Profession Since 1877

MEMBER
Audit Bureau of Circulations
Associated Business Papers

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

Published Every Other Wednesday

SUBSCRIPTION PRICE
U. S. and Canada $3 a year; Foreign $4; Single copies 25c

Issued by CASE-SHEPPERD-MANN PUBLISHING CORPORATION
24 West 40th Street, New York City
Also publishers of "Water Works Engineering," "Municipal Sanitation," Technical Books, etc.

KARL M. MANN
President and Advertising Director

FRED SHEPPERD
Managing Editor

I. HERBERT CASE
Vice-Pres. and General Manager

H. S. ESSEX, Advertising Manager; ROBERT H. LOCKWOOD, Editor; N. N. WOLPERT, Asst. Editor
HAROLD T. MURRAY, Vice-Pres. and Western Manager, 30 N. Michigan Ave., Chicago, Ill. Telephone Franklin 0128

EDITORIAL ADVISORY BOARD

JOHN KENLON
Chief, New York Fire Dept.
Founder of New York Fire College

JOHN C. MORAN
Chief, Fire Department
Hartford, Conn.

GEO. J. KUSS
Former Deputy Chief N. Y. F. D.; Lecturer on Fire Fighting, Delehanty Institute, N. Y.

A. A. BELL
Chief of Fire Brigades and Engineer "America Fore" Group of Fire Insurance Cos.

The Survival of the Fittest

WHILE we hear a lot of talk these days about the number of people out of work and the difficulty of finding jobs, we are beginning to wonder, after a bit of observation, whether this unemployment situation isn't to a large extent really a problem of unemployables.

¶ In every industry and profession there is a crying need now as always for thoroughly capable men of outstanding ability—the type of men who have made a study of their work and are conscientiously trying to better themselves. The trouble today is that too many people are making excuses instead of getting out and making good.

¶ With conditions as they are, fire department jobs are beginning to look mighty attractive to more and more men. Just make it your business to keep a jump ahead of the other fellow in knowledge and you should have nothing to worry about.

The Publishers

CONTENTS

VOL. LXXXIII No. 9

APRIL 30, 1930

When May Spontaneous Ignition Occur? by S. H. Ingberg 357
Research on Subject by U. S. Bureau of Standards.

Fire Traps at Ohio Penitentiary Produce Record Holocaust, (Illustrated) 359
Culminating a Series of Prison Fires During the Past 12 Months, Ohio Penitentiary Blaze Results in Loss of 317 Lives.

"Taxpayers"—Fires with Potentialities (Illustrated) 361
Channels for Rapid Spread of Fire Make Careful Work Imperative.

The Round Table 365
What Suggestions, Have You for Better Cooperation Between Police and Fire Departments to Save Life and Property, and to Lower Fire Losses?

With the Editor 367
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers 369
Replies to Questions on All Manners of Subjects of Fire Fighting and Fire Prevention.

Recent Important Fires Specially Reported (Illustrated) 371
Chemical Plant Fire in Everett, Mass.—Burnings of Two Weeks.

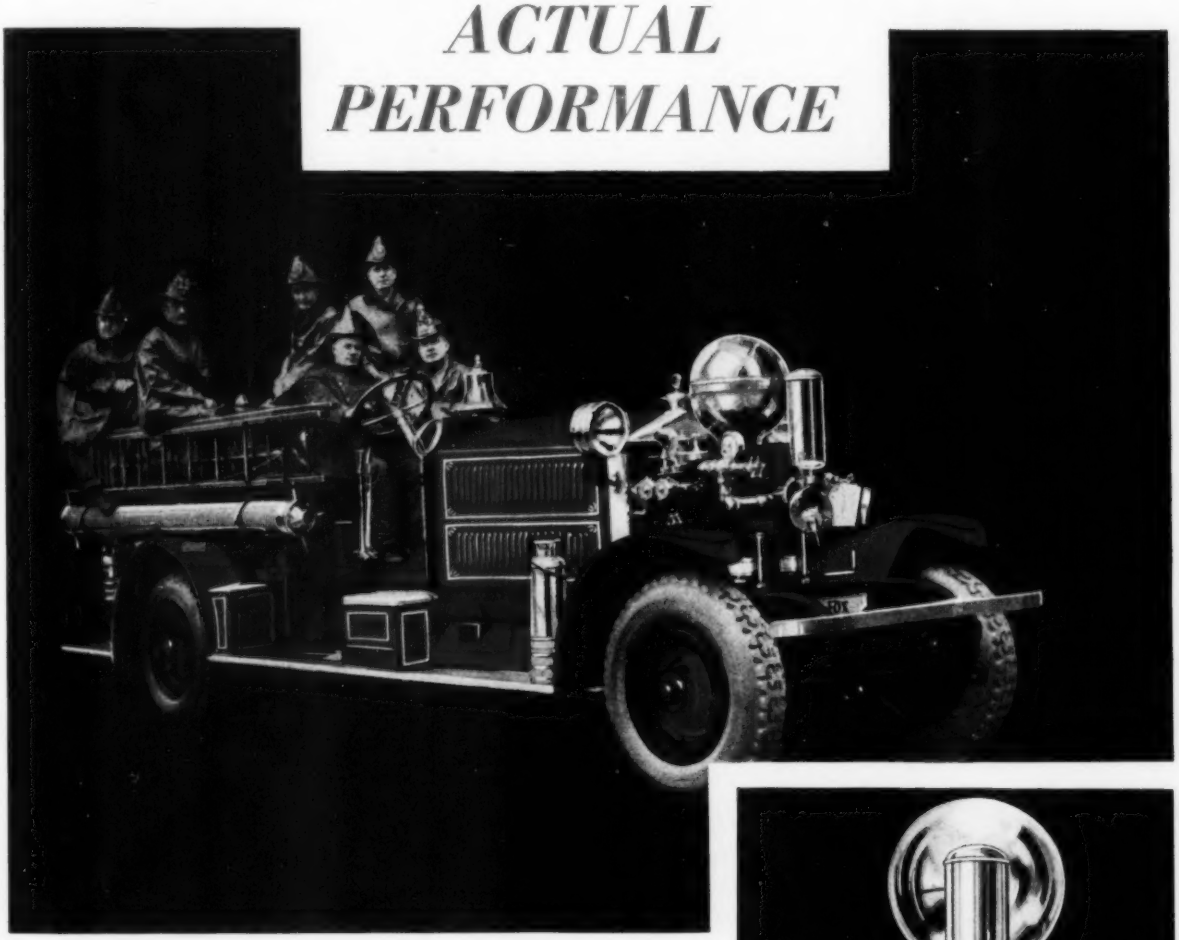
Fire Department Activities 378
Newsy Notes from All Over the Country with Matters Firemanic.

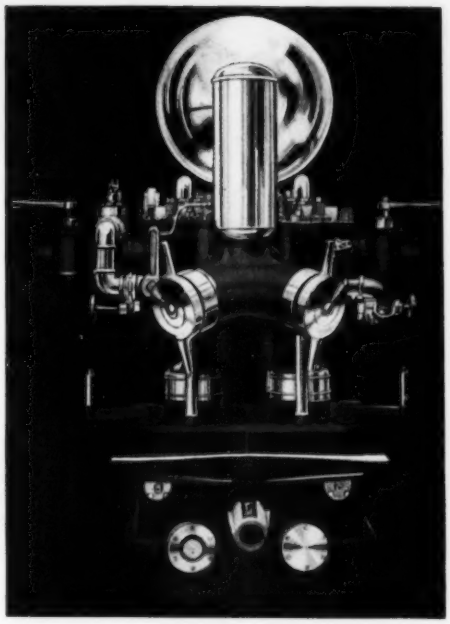
Fire Department Improvements 379
Record of Business Activities in the Fire Protection Field.

False Alarms 380
Humorous Side of the Fire Protection Profession.

Contents of this issue copyrighted, 1930, by the Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York City.
Entered as second class matter April 15, 1919, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

Its Supremacy Is Measured in ACTUAL PERFORMANCE





The AHRENS-FOX PISTON PUMPER

ACTUAL performance has proven the supremacy of Ahrens-Fox Pumper under the most severe fire fighting conditions. Built like a battleship with watchlike precision down to the smallest detail.

There's real quality in everything that goes into the Ahrens-Fox make up—quality that insures long life and unfailing service.

If you believe in safeguarding your community with the best fire apparatus money can buy investigate the Ahrens-Fox. We will gladly send you descriptive literature.

THE AHRENS-FOX FIRE ENGINE COMPANY

CINCINNATI, OHIO

It will help if you will mention FIRE ENGINEERING *when writing advertisers.*

If hydrants were built like fountains, property would be safer—

The Darling valve for waterworks system is equipped with the famous Darling revolving disc gate. It opens and closes easily and gives a tight close.

Write for literature on Darling equipment—you may find valuable information in the details.

If a clogged or non-operating fire hydrant was as evident as a park fountain which failed to flow, then hydrant dependability would be less important than it is. For then a hydrant out of order could be immediately reported. But since hydrant failure is seldom detected until the need for it arises, the virtue of Darling dependability becomes apparent.

Consider these outstanding safety features of Darling hydrants. 1. Automatic drain of main barrel—preventing ice jams. 2. Unobstructed base—preventing sediment jam. 3. Main valve of leather—other working parts of bronze—preventing jam by corrosion. Other features are, one man inspection, all working parts easily brought out through the top. Extra large main barrel and equal inlet and outlet to the main barrel.

DARLING FIRE HYDRANTS

Darling Valve & Manufacturing Co. Williamsport, Pa.

New York Chicago Oklahoma City Houston 754

Mack FIRE APPARATUS

REVERE, MASS., GETS THE FIRST NEW MACK 600-GALLON PUMPER

Revere—with the alertness of the great patriot for whom it is named—is the first municipality to purchase a standard Mack-built 600-gallon pumper. This latest addition to the modern line of Fire Apparatus developed by Mack Progressive Fire Engineering is known as the Type 70. It makes available a pumping engine in a capacity range below that heretofore offered by Mack—yet it is built to the same exclusive Mack standards as its famous predecessors. By this addition Mack offers today a complete line of motorized fire apparatus equal in range of types and capacities to any in the industry—and far superior in quality, long service, and fire-fighting efficiency.

Back of Mack Fire Apparatus are thirty years of motor transport manufacturing success.

Types of Mack Fire-Fighting Equipment

Hose Wagons

Chemical Engines

Combination hose and chemical

Pumpers

Triple combinations—pump, hose, booster (chemical)

City service hook and ladder trucks

Quadruple combinations—pump, ladders, hose, booster (chemical)

Tractors

Tractor-drawn aerial hook and ladder trucks

Squad cars

MACK TRUCKS, INC.
Fire Engine Division
25 Broadway, New York, N.Y.

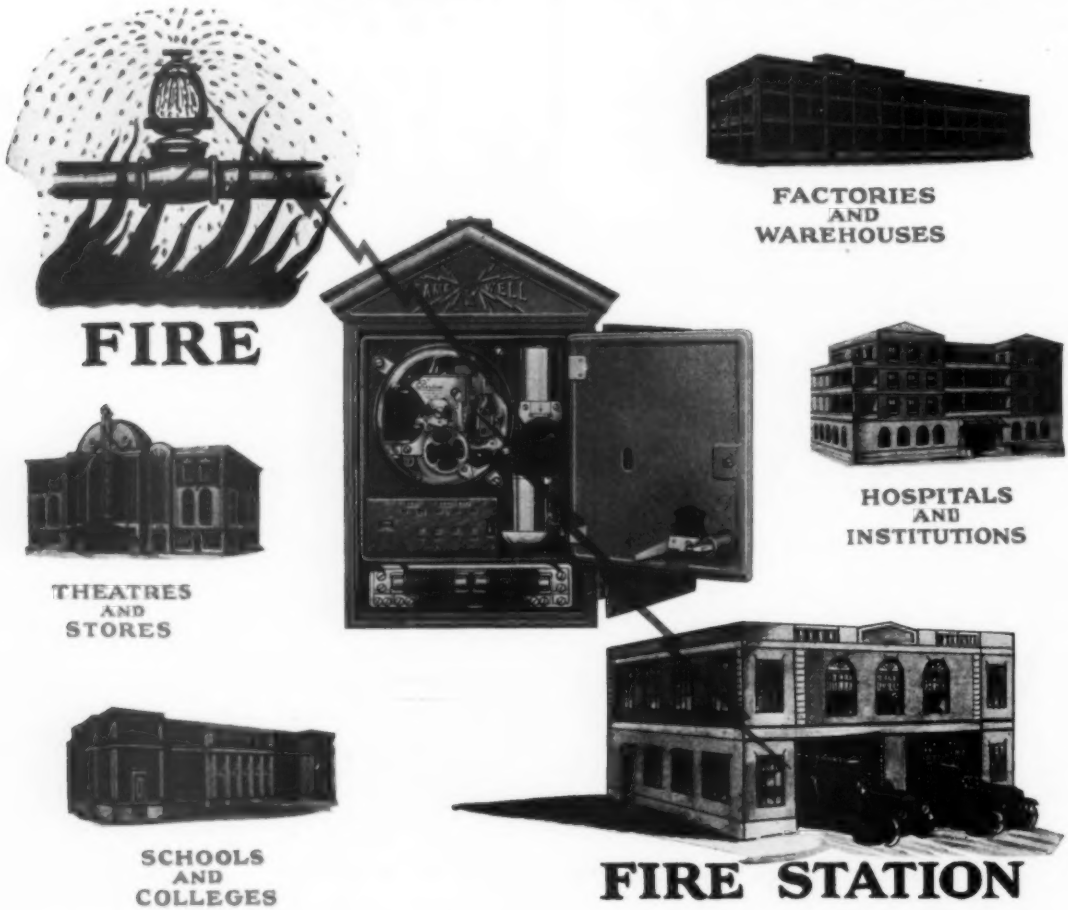
Mack

More than 100 direct Mack Factory branches are equipped to service Mack Fire Apparatus in any emergency

TRUCKS · BUSES · FIRE APPARATUS · LOCOMOTIVES

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers.*

The SPRINKLER WATCHMAN



CONNECTED up with the riser of a sprinkler system, the 1929 Model Peerless Fire Alarm Box *Master Model* makes an efficient *Sprinkler Watchman.*

Such connections in your city will add to the efficiency of your fire department. They notify the fire department as the sprinklers start to operate so that the firemen arrive at a fire while it is still small. Then, should the fire be beyond control of the sprinklers, the firemen can extinguish it. In case the sprinklers have already put out the fire, the firemen can shut off the water and prevent any unnecessary loss from that source.

Fire Chiefs and Superintendents of Fire Alarm in many cities have already recognized the value of such a connection and have recommended it to the business houses, theatres, institutions, factories, stores and other types of sprinkler protected property. Among these cities are:

Fresno, Calif.	Santa Ana, Calif.	Denver, Colo.
Columbus, Ind.	Huntington, Ind.	Maysville, Ky.
Lewiston, Me.	Lawrence, Mass.	Lynn, Mass.
Gardner, Mass.	Binghamton, N. Y.	White Plains, N. Y.
Asheville, N. C.	Burlington, N. C.	Charlotte, N. C.
Cleveland, Ohio	Bethlehem, Pa.	Wichita Falls, Texas
Burlington, Vt.	Newport News, Va.	Norfolk, Va.
	Columbus, Ga.	

In Denver alone, there are 100 or more of these installations, many of which have been in service for as long as ten years.

Insurance interests have also recognized this *Sprinkler Watchman*, and have recommended its installation in various sections of the country; made allowances in rates and in some cases have even allowed factories to dispense with watchmen.

(If you would like a wiring diagram and further details on the *Sprinkler Watchman*, write to the address below.)

THE GAMEWELL COMPANY
NEWTON, MASSACHUSETTS

"A BOX A BLOCK"

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXXIII APRIL 30, 1930 NUMBER 9

When May Spontaneous Ignition Occur?

Research on Subject by United States Bureau of Standards—Some Important Experiments—Nature of the Tests Employed

By S. H. INGBERG, U. S. Bureau of Standards, Washington, D. C.

THE subject of spontaneous ignition is one of vital importance to the fire chief, and the following paper will probably prove of interest and value in this respect:

The fire hazard of materials is gauged in part by the temperatures at which ignition may occur and whether at temperatures below these points heating can set in that eventually will result in ignition. Fire records give frequent instances of ignition of materials subjected to temperatures considerably below their normal ignition points. To judge from these reports the action may be one of lowering of ignition temperature by continued exposue to heat resulting in changes in the material, or a self-heating process caused by slow chemical reactions such as oxidation or combination of bacterial and chemical action that within a sufficient mass of the material, builds up temperatures high enough to cause ignition. We found accordingly that from the fire hazard standpoint, ignition temperature and spontaneous heating leading to ignition are so closely related as to necessitate determinations of both for any given case.

Some of the Bureau's first work in this field was done on pyroxylin plastics for the information of the Steamboat Inspection Service of the Department of Commerce. Pyroxylin plastics consist essentially of solutions or mixtures of nitrocellulose with another substance, usually camphor. If the cellulose molecule be taken as $C_{24}H_{40}O_{20}$, nitrocellulose can be considered as formed by the substitution NO_2 groups for the hydrogen atoms. For pyroxylin plastics the nitrogen content ranges from 10.5 to 12.2 per cent, according to the degree of nitration. It is used mainly for photographic film and for celluloid articles. Nitrocellulose containing from 12.4 to 12.8 per cent is used in the manufacture of smokeless powder and with nitrogen content of 13 to 13.5 per cent nitrocellulose is termed guncotton. The essential difference between pyroxylin plastics and these explosives is in the nitrogen content and the stabilization, which for pyroxylin plastics is accomplished mainly by the formation of a solid solution in camphor. The camphor content of photographic film is generally near 9 per cent while that of the common celluloid articles is 20 to 30 per cent. This apparently inhibits the spontaneous heating at ordinary atmospheric temperatures to which smokeless powder is subject and retards the rate of decomposition or burning after ignition at higher temperatures.

The tests reported in the paper referred to included determinations of stability by heating for periods up to 10 days at different temperatures. For temperatures up to 110°C (230°F) no active decomposition occurred although weight losses up to 42 per cent occurred at 110°C. Decomposition leading to heating and ignition in 8½ to 9 hours was produced by temperatures near 120°C (248°F) where a mass of celluloid sufficiently large to retain the heat evolved was present. Whether this would have occurred at lower temperatures was not definitely determined since the tests for loss of weight up to 110°C were made on small samples in a thermostat maintained at a constant temperature. At 135°C (275°F) decomposition was more rapid, ignition of 2 to 5 gram samples in small (150cc) beakers in a thermostat of 28 liter (about one cubic foot) capacity, maintained at this temperature, taking place within two hours with two-thirds of a total number of 20 samples, representing a range in celluloid material. The actual temperature of the sample at the time of ignition was apparently considerably above that of the thermostat chamber. To quote from the paper: "The sample gradually puffed up until it was enormously swelled. Suddenly the outer covering of this mass would burst, sending out large volumes of dense fumes, and in an instant the whole mass was in decomposition. In a number of cases this decomposition followed with explosive rapidity accompanied by a flash of flame, the substance burning up practically without organic residue."

At higher temperatures (170 to 220°C, 338 to 428°F) the time lag before ignition was very much reduced, ranging from an average of 163 seconds for the lower temperature to 33 seconds for the higher limit, the samples being very small (.05g) pieces dropped into test tubes immersed in a constant temperature bath.

To Determine Ignition Temperature

Attempts were also made to determine the "ignition temperature" which the authors regarded as the temperature at which there was no perceptible lag when a small sample was placed in contact with material at the given temperature. The first tests were made by placing small pieces of celluloid edgewise against a porcelain tube previously heated in an electric furnace, the temperature of the tube being taken as that indicated by a thermocouple within it. This method gave ignition temperatures from 552 to 648°C (1026 to 1198°F). In another series of tests

"The spontaneous heating process may result either in a rise in temperature in the material above its surroundings but not attaining ignition temperature even under favorable conditions, or where the action is more decided. ignition may result, provided conditions favorable in point of air supply and conservation of the heat developed are present."

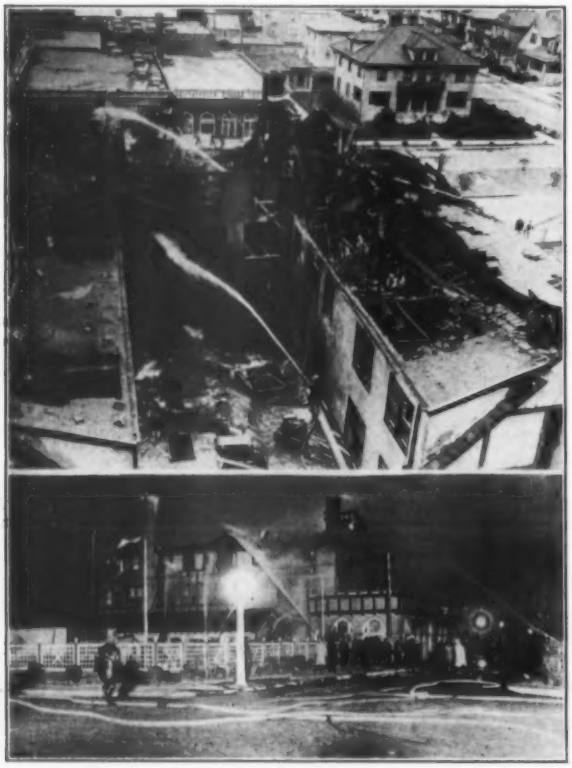
the small pieces of celluloid were dropped on molten lead in a deep receptacle. Ignition temperatures obtained by this method ranged from 433 to 523°C (811 to 973°F). The authors attribute the difference to the fact that the air above the lead bath was nearer the temperature of its medium than that surrounding the porcelain tube, and hence the temperatures of the celluloid specimens at the point of ignition were better given by that of the lead bath than the porcelain tube.

It appears, however, that even the lead-bath temperatures were somewhat higher than the ignition points of the materials as determined by other methods. First, there is considerable difference between the temperature of the body of the bath and that of the surface film with which the sample to be ignited is in contact. Further, some time, even if it be only a fraction of a second, must be allowed for a sufficient portion of the sample to attain the temperature of the medium.

The work on celluloid has been here reviewed in some detail on account of the large temperature range over which ignition of this material is perceptibly a function of time of exposure and the general interest the material has from the fire hazard standpoint. For it the phenomena of spontaneous heating grade continuously into those pertaining to ignition.

Experiments on X-Ray Film

In connection with experiments with X-ray film made subsequent to the Cleveland Clinic Fire, we made heating tests near 135°C (275°F) and short time ignition tests at temperatures from 170 to 230°C (338 to 446°F). The time lags before ignition or decomposition were considerably shorter than those reported in our Technologic Paper No. 98, due probably to the higher nitrogen and lower camphor content of the pyroxylin plastic used for photographic purposes as compared with that in common celluloid articles. Nor did the tests we made give indications of tendency to heat spontaneously at temperatures much below 100°C, this also confirming results of previous tests. It appears that if spontaneous heating at these lower temperatures is to occur, it must be preceded by loss of most of the camphor content of the film. At ordinary temperatures this takes place very slowly and if protected against light and high room temperatures the action may possibly be practically inhibited. Hence, while some conditions as yet unknown affect the hazards of film storage, it can at least be stated that at ordinary or slightly elevated room temperatures, photographic film, and well made and stabilized pyroxylin plastics generally, present no immediate hazard from spontaneous ignition.



Summer Hotel Destroyed at Long Beach, L. I.

The Lafayette Hotel consisting of two hundred rooms, and nine adjacent stores were destroyed at Long Beach, Long Island. At the time of the fire, a forty-five-mile wind was blowing and sparks were carried for many blocks. For a time it was feared that the entire town was in danger. The upper photograph shows the interior court and the wreckage while the lower shows the firemen fighting the fire from the outside.

Spontaneous Ignition in Coroa and Jute

Among other materials whose spontaneous ignition hazard in marine shipments has received attention are coroa and jute. Coroa is imported from South America and almost all of the jute consumed in this country is imported from India. Our initial tests on jute fiber conducted at the request of representatives of Marine Underwriters were on small samples and gave negative results as far as indications of susceptibility to spontaneous heating are concerned. Similar results were obtained with coroa fiber. In these tests the Mackay apparatus was used, which consists of an annular boiler containing the bath liquid, usually water at 100°C, in the interior opening of which is a wire gauze cylinder for holding the material to be tested and also tubes for supplying air to the specimen. Spontaneous heating is indicated by a rise in temperature within this material above that of the containing chamber.

Another Method of Testing

In common with other laboratories, we have found a somewhat more satisfactory procedure to consist in slowly heating the material to be tested within a chamber whose temperature is maintained a little below that of the sample after it begins to heat. This in effect provides insulation against loss of heat comparable to what obtains for a much larger sample.

It was appreciated, however, that even this procedure was not representative of conditions in a ship hold where a high degree of insulation obtains near the middle of a hold containing a large amount of the material. Also, with the small sample, conditions for possible bacterial growth can be introduced with difficulty. That bacteria may be the initial cause of heating in these materials appears reasonable considering the contact with soil and water organisms to which they are subjected. Accordingly, to carry farther the inquiry into the possibility of spontaneous ignition of jute cargoes, a cooperative arrangement with a group of the Association of Marine Underwriters, the Bureau of Chemistry and Soils and the Bureau of Standards was effected.

For the physical tests, the Bureau of Standards has built four heating chambers each large enough to accommodate a bale of jute of 20 by 20 by 50 inch nominal size. They are equipped with heating elements and automatic temperature regulation for maintaining constant temperatures up to 250°C (482°F). Means are also provided for humidity control and for indication of the carbon dioxide content of the air within them. The present general procedure involves maintaining chamber temperatures of 30, 35, 45 and 60°C for periods long enough to allow time for any bacterial or other heating to develop. When such heating begins the chamber temperature will be maintained sufficiently lower than that of the bale to insure that the latter is not receiving heat from the chamber. In absnce of any self-heating effects at these temperatures, the chamber temperatures will be further increased to determine possibility of heating from oxidation or other causes at such higher temperatures. The moisture content as also the bacterial content of some of the bales were increased above that normally present to introduce conditions more favorable for spontaneous heating.

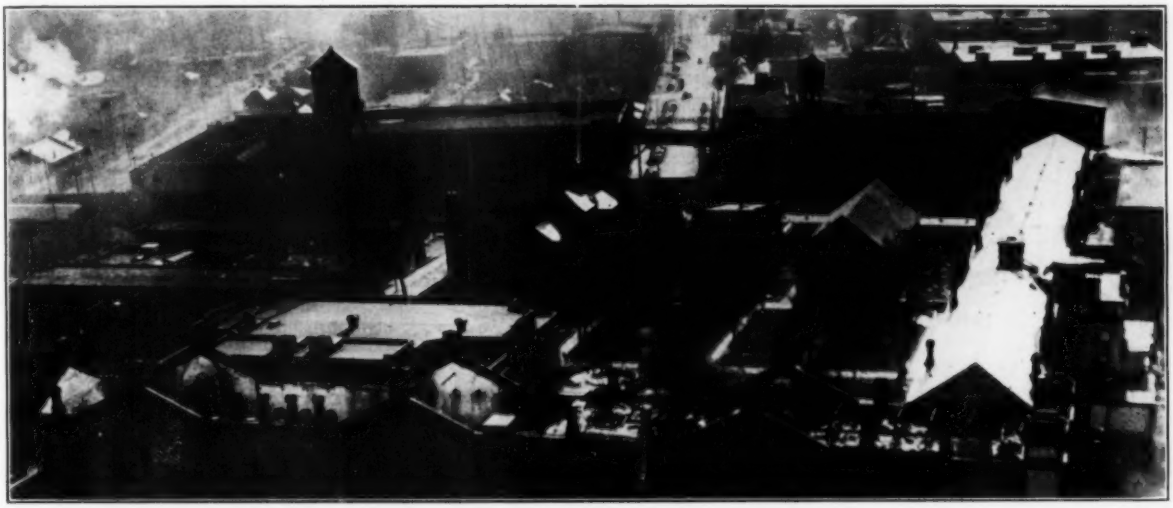
Preliminary Bacteriological Work

A considerable amount of preliminary bacteriological work has been done by the Research Associate assigned to the project by the Underwriters, working in cooperation with the Bureau of Chemistry and Soils. This has included bacterial counts of samples of jute from all bales received, identification of types of bacterial flora present and tests of their ability to decompose the cellulose materials involved. This necessitated the isolation of specific groups of micro-organisms on selective culture media.

Other Causes Considered

It is proposed to cover in these tests not only the possibility of heating from bacterial action but also from other causes such as oxidizing oils or other contaminating materials. In particular a number of vegetable oils are shipped from the same ports, often on the same ships as jute, and spilling during loading may

(*Continued on page* 383)



View of Some of the Buildings Forming the State Penitentiary, Columbus, Ohio

Fire Traps at Ohio Penitentiary Produce Record Holocaust

Culminating a Series of Prison Fires During the Past Twelve Months, Ohio Penitentiary Blaze Results in Loss of 317 Lives — Obsolete Buildings and Lack of Foresight Blamed

PRISONERS in the State Penitentiary at Columbus, Ohio, in an effort to regain their freedom, set fire to several cell blocks that resulted in the death of over three hundred persons in the brief time of an hour.

Conditions at the prison left much to be desired. The building was completed in 1898 and was designed for 1,500 persons. At the time of the fire, there were 4,300 persons housed there, four to a cell.

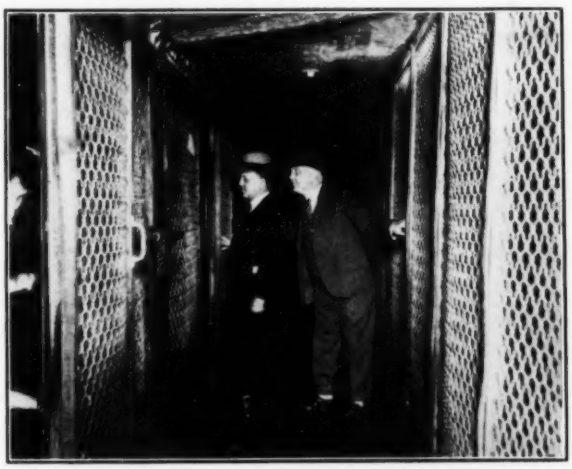
The first alarm was sounded at 5:50 p.m. when all the inmates had been locked in their cells for the night. The fire was discovered in the northwest section of the prison, in the roof of G and H cell blocks which are under construction. The flames worked south to the southwest corner and then took an eastward course. For a time the administration section of the exposed southern wing was threatened.

At about 8 p.m. the original blaze was believed to be under control. One half hour later, new fires broke out, this time in the cotton and woolen mills about nine hundred feet from the first fire. Oil soaked cloth was used to set the mills on fire and also the Catholic chapel.

The most tragic scenes took place in the fifth and sixth upper tiers from the middle of the western section of G and H blocks southward.

At the first outbreak of fire, all telephones in the institution were rendered useless, a circumstance which strengthens the belief that a wholesale jail delivery was planned. However, news of what was taking place had flashed to all parts of the city and all available police were rushed to the prison. Crowds had gathered outside the prison walls even before the arrival of the two fire companies. As the fire gained headway, calls were sent for additional apparatus, an extra force of reserve guards, National Guard units and regular army infantrymen. Doctors and nurses also responded.

The large loss of life resulted from delay in opening cells in the doomed sections. Later prisoners who were released, secured sledge hammers and rushed back to



Investigating the Results of the Cell Fires

release prisoners behind locked doors. Locks were broken and other emergency measures tried to get the men out of the inferno. In other cases, guards tossed keys to convicts with instructions to open as many cells as possible.

The thousands of excited prisoners in the yard, the steady advance of flames, and the number of charred

bodies that were placed in the yard for future attention, brought new problems. There was the added danger that the frenzied prisoners would attempt a dash for freedom.

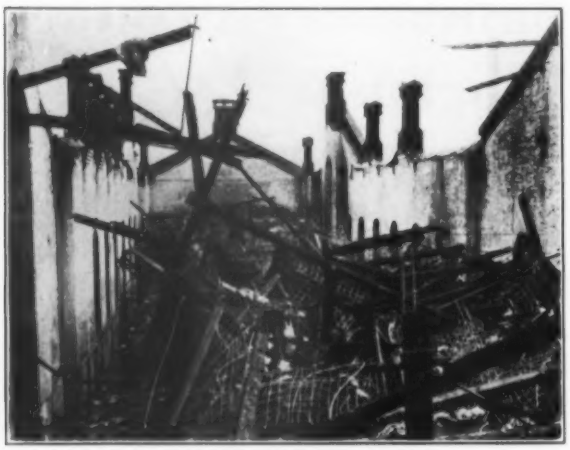
A company of regular army soldiers reached the scene and were assigned to duty on the main gate. An extra force of guards were rushed to the west wall where it was reported prisoners were threatening to escape through a gate opened to allow ambulances to enter. On the outside lawns, guards armed with machine guns had their weapons trained on the prison windows.

In the inner prison office, all was confusion. Here guards handed out ammunition to reserve guards. Others had a difficult time identifying doctors and workers who were permitted into the prison yard.

In a report published in The Handbook of American Prisons and Reformitories in 1929, the following was printed:

"The ancient plant at the State Penitentiary in Columbus, one of the largest prisons in the country, suffers from overcrowding worse than that in any other large prison. The need of another institution in the Ohio penal system has been apparent for many years.

"Ohio, like many other states has allowed its prison population to get far ahead of its building program, and



Burned Out Cell Block at Columbus

socially-minded citizens should demand legislative and executive action without delay. When overcrowding is coupled with the amount of unemployment found here, the state of affairs becomes increasingly critical.

"A second occurrence which received widespread publicity was the fire which destroyed a wooden building used as a dormitory for prisoners at the brick plant. The shocking loss of life which took place when prisoners were unable to free themselves from the burning building, called attention to a condition which is paralleled in many other states where prisoners, especially on the farms, in road camps and on other outlying details, are quartered in buildings that are firetraps, with inadequate provision for their immediate release in case of fire."

At an investigation conducted after the fire, it was learned that no procedure had been drawn for the guards to follow in case of fire. In many instances it was brought out that guards refused to free convicts from cells in the burning sections. Investigators say that if the prisoners were released at once, there would not have been so great a loss of life.

Chief A. E. Nice of Columbus stated that all the victims could have been saved if they had been released from their cells as soon as the fire was discovered. He told the Board of Inquiry investigating the fire that there must have been undue delay in calling the fire department because the first alarm came from a box outside the prison walls. He further stated that there was great confusion when the fire companies arrived. Convicts interfered with the firemen while they were handling hose, but not with malicious intent for the prisoners were doing their best to help.

Seven Senate Bills on Federal Institutions

As a direct aftermath of the Ohio prison fire and due to testimony given by Attorney General Mitchell that Federal prisons are overcrowded, the Senate Judiciary Committee ordered favorable reports on seven bills to relieve conditions in Federal institutions. All of these measures were passed by the house.

Of the measures reported, the most important was one authorizing the Attorney General to obtain sites of not less than one thousand acres each for two new prisons. One must be west of the Mississippi River and the other in the Northeastern section. The prison to be built west of the Mississippi is to serve as a reformatory and the other will house hardened criminals.

The other measures approved have these aims:

Authorize the Attorney General to speed up and promote generally probation work in Federal courts.

Instruct the Attorney General to obtain a site for a hospital for defective delinquents.

Remove the persons who may be confined at the United States Industrial Reformatory at Chillicothe, Ohio.

Provide for diversification of employment of Federal prisoners.

Create a single board of parole consisting of three members to be appointed by the Attorney General with a salary of $7,500 for each member. This board would replace all existing Federal boards of parole.

Authorize the public health service to provide medical service in Federal prisons.

Sanford Bates, superintendent of Federal prisons, has sent a questionnaire to all wardens of Federal prisons asking what precautions they have taken to clear the institutions of inmates in case of fire. He urged that safeguards be provided.

New Britain Protects Her Firemen

New Britain, Conn., has just taken out liability policies covering all members of the fire department, so that in the event of a fire department accident the firemen will be protected against law suits.

Fire department officials of the state have endeavored, for the past several years to get legislation through the state legislature giving this protection to members of the department in the state who as drivers of apparatus are liable in case of accident, but no success was had in these efforts.

To avoid further delay in affording members of the department liability protection, Chief William J. Noble of New Britain, after many months of hard work, finally induced the city authorities to take the initiative and as a result all drivers of apparatus are now covered with liability insurance whereby they will be protected to the extent of $10,000 in the event that a single person is injured or killed, or $20,000 in the case of a double accident.

The New Britain Department is believed to be the first large department in the country having such protection.

Pumper Delivered to Youngstown—A Mack pumper has been delivered to Youngstown, Ohio, to replace one that was destroyed in fighting an oil fire.

Work Started on Weymouth Station—Construction has started on a $62,000 fire house for Weymouth, Mass. It will be completed within 180 working days. On the second floor will be living quarters, kitchen, recreation room and other facilities for the men.

The Contents of a "Taxpayer" Determine the Intensity of the Fire

Here is a store in one unit of a taxpayer fully involved at recent fire in Brooklyn. An idea of the intense heat may be gained by noting the flames sweeping out of the front of the store. In this particular case the occupancy of the store was men's clothing.

"Taxpayers"-Fires with Potentialities

Channels for Rapid Spread of Fire Make Careful Work Imperative—Proximity of High Buildings a Serious Factor

"TAXPAYERS" are usually one story buildings placed upon property of fairly high value in order to make such property produce a little revenue while the property itself increases in value. Thus the name "taxpayer."

Because of the temporary nature of these structures, and the fact that they are rarely more than one story in height, fire safety methods are given little consideration in their construction.

Due to the unsettled real estate market in recent years, taxpayers have increased at a tremendous rate. They represent a severe problem for the fire department, particularly where they are placed alongside tall structures.

While these buildings are usually used entirely for commercial purposes, they are sometimes fitted in the rear with apartments for occupancy by the persons conducting business in the front part of the store.

The taxpayer which predominates at the present time is constructed as follows: A basement is first built of concrete block, and on this basement is erected a one story brick store. The store itself is encircled by a brick wall, but the partitions between adjacent stores are usually of gypsum block, or lath and plaster on two by four studding.

The roof which rests directly on the front and rear walls is of a gentle slope while the ceilings below are horizontal. The result is an open cock loft. The roof is constructed over the entire building which may occupy eight or ten lots in length, and the ceiling is suspended by short pieces of two by four attached to the roof beams and the ceiling two by fours below. As these supporting members are placed about eighteen inches apart, they offer no obstruction to the passage of flame through the cock loft from one end of the structure to the other. And this is a serious hazard. Fire rising in any one of the stores and entering the cock loft quickly spreads through the entire length and may involve the row before its progress is fully appreciated.

Attempts are occasionally made to fire-stop the buildings at points where dividing partitions rise, but these are usually but lame excuses for fire walls, since they are chiefly of bricks loosely piled and not reaching to the roof boarding. While they may delay the fire in its spread, they can by no means be classed as fire stops.

The basements may be divided by concrete block, or they may be open from one end to the other. In the latter case bins with padlocked doors are provided for storing material from the various establishments above. But more often the basement is found divided by frame partitions or by gypsum block division walls. In the case of frame partitions, fire will spread quickly throughout the entire basement due to the highly inflammable materials usually found therein.

Entrance to the basement is usually provided in the

front as well as within the buildings. Partitions do not always pass through the floor, but are frequently built from the floor to the ceiling.

The contents of the stores must receive consideration. Such stores may be occupied as dry goods stores, clothing stores, drug stores, tire shops, battery shops or for any of a multitude of retail establishments. The nature of the contents will determine how rapidly fire will enter the cock loft.

Fire usually starts in the basement and unless it is discovered early it may pass from one basement through the entire row. If the partitions run through from the basement to the cock loft and fire starts in the basement, then a cock loft fire is almost sure to result. Unless the fire is discovered early the entire row of buildings may suffer. In handling fires of this sort where they have started in the basement, quick work in covering the adjoining basements is apt to be necessary.

Usually the first line endeavors to make the basement by either the inside stairway or the entrance at the front of the building. Following lines go to the basements on either side to make sure that the fire has not extended, opening the doorways leading to basement both within the store and at the front to provide ventilation for the men operating therein.

Where the fire has spread to the cock loft, fast work is vital. Members of the first truck company are sent to the roof at once to open up over the store in which the fire has advanced the most, and from which store it has probably entered the cock loft. The men on the roof also open up for lines if such can be used with effectiveness.

The ceilings of the stores on either side of the fire section are pulled to make it possible for lines to be placed in operation. If necessary, the ceiling of stores on either side of the adjoining stores are also pulled. These ceilings are usually of tin, and are readily removed with a 6-foot hook.

Extinguishing Cock Loft Fire

Once the ceilings are opened, then it is a question of getting lines in operation to kill the fire in the cock loft and to prevent its spread in any direction. A bent nozzle, such as the New York bent pipe, or nozzles which function in a similar manner, are very effective for this work.

Occasionally cellar pipes may be put to work through the roof of the building on either side of the store burning, to check the spread of the fire. But in operating any type of nozzle particular care must be taken to prevent unnecessary water damage, as more water than necessary may be employed in checking the fire and this water will ultimately find its way down to the floor below.

Where the fire is burning in one of the stores, the first line is usually stretched to the front of the building, and the second line to the rear. The width of such stores being small, the task of the department in killing the fire is comparatively small, unless the fire has entered the cock loft and has spread over the row. In this latter case, it is a question of covering exposures and thus confining the fire to a single unit.

As noted above, unnecessary water damage must be avoided by the prompt shutting off of streams when they are no longer needed.

Where one of the taxpayers is located alongside a tall building, the exposure hazard may be severe, particularly if the contents of the store are such as to make a hot fire. In this case, in addition to operating on the fire a line or two will have to be put in operation on the roof of the row to cover windows of the exposed building.

A deck gun may also be used with good effect, if placed in street in front of the burning building. Deck gun can cover exposures very effectively and if reporting on first alarm, it can be put in operation so as to provide the maximum effectiveness of the first company on hand.

Finally, the taxpayer is a comparatively simple structure in which to handle a fire, but it may be a serious matter if there are exposures around it and if fire gains control of the cock loft. One point to remember is that once fire has entered the cock loft it is going to travel unobstructed in both directions with great rapidity. Fast work in opening up both to provide ventilation and to get streams in operation is of prime importance.

Near Disaster During Mimic Aerial Battle

During a mimic air battle at Mather Field, Cal., a tri-motored hospital plane caught on fire from a short circuit. The fire department now located at the field succeeded in extinguishing the flames.

Fined for Having a Sooty Flue

There is one resident of Danielson, Conn., who knows that it is unlawful to have a sooty chimney, and it is certain that others will profit from that experience.

Firemen were called to fight a blaze that started in the chimney. The occupant of the house was brought to court on charges of violation of a borough ordinance requiring that flues be cleaned at least once a year.

Chief A. P. Woodward testified that on the day of the fire the defendant said that the chimney had not been cleaned for four or five years, and that it would be cleaned when the defendant was good and ready. The court adjourned the case to permit the person to obtain legal advice. But he reappeared within a short while, pleaded guilty and paid a fine of one dollar plus $9.34 costs.

Illinois Short Course to be Held in June

The sixth annual Short Course on Fire Prevention, Control and Extinguishment of the Illinois Firemen's Association will be held at the University of Illinois, Champaign-Urbana on June 17-20. The course is in charge of Prof. C. C. Palmer and all correspondence should be directed to him at the Architectural Building, University of Illinois, Urbana, Ill.

Willsboro, Pa., Raising Funds—Funds are being raised in Willsboro, Pa., for the purpose of a pumper.

Pitman, N. J., Plans Fire Station—Plans have been drawn for a two-story fire station to be erected in Pitman, N. J.

Hartford to Open Fire House—On May 1 a new fire house will be opened in New Britain, Conn., to be known as Company No. 9.

Bellingham Limits Apparatus Runs—Officials of Bellingham, Wash., have ruled that fire apparatus is not to leave the city limits.

Howland, Me., Buys Pumper—Howland, Me., has purchased a 500-gallon McCann & Sons pumper. Delivery will be made within another month.

Some Recent Activities in Spreading Fire Prevention Information

Guarding Against Hospital Disasters—Fire Protection in the Schools—What the Railroads Are Accomplishing

By RICHARD E. VERNOR, Manager, Fire Prevention Department, Western Actuarial Bureau, Chicago

BESIDES being of interest as showing what is being done to prevent fires throughout the land, the following paper will be found to contain many suggestions to chiefs who are looking for ideas in the matter of fire safety:

Practically every regional safety course under the direction of the National Safety Council now gives fire prevention a conspicuous place upon its program, and this procedure has been promptly followed by a great many local safety schools. Perhaps through the co-operation of the Wisconsin Industrial Commission, the industrial safety school idea has been duplicated to a greater extent than anywhere else, although I realize that there is danger in too free use of superlatives. However, four or five of these so-called vocational schools are being conducted weekly during the winter months in as many cities, an entirely different set of towns being selected at the completion of each course. Fire prevention is always given an important position on these unusual programs. This has been a most fertile field for fire prevention education.

On November fifteenth last, at the Convention of the American Municipal Association at Chicago, an interesting part of the program was given over to fire prevention. The functions of the various committees of the Council were outlined to the Association, and an interesting story of the Underwriters' Laboratories was presented by Mr. Alcock of that institution. As each delegate present was a key man representing his home state League of Municipalities, it will be quickly seen how far-reaching may have been the influence of such a session.

To Prevent Repetition of Cleveland Clinic Disaster

As an extraordinary precaution against the repetition of such disasters in hospitals as that of the Cleveland Clinic, the National Board of Fire Underwriters, with the active co-operation of trained engineers of the state rating and inspection bureaus, has been actively engaged in a program providing a thorough inspection service to the 5,000 hospitals of the American Hospital Association. Seven hundred of these hospitals have already been carefully surveyed, and by the end of the summer of 1930 it is expected that twenty-five hundred will have received this service. The educational value of such a program is easily appreciated by this body.

Another noteworthy fire prevention development of an inspection nature has occurred. At the request of the Missouri State Survey Commission, and under the able direction of Mr. Terry of the National Fire Waste Council, a joint fire prevention inspection of all state-owned institutions was made by the Missouri Inspection Bureau, and the Missouri State Fire Prevention Association. As the result of ten weeks of intensive labor, a final report, consisting of twenty-seven volumes was presented to the Commission. This report covered everything from a state-owned garage to a complete survey of the state university. Although no insurance whatever is carried on any of the property involved, the work was most carefully done with special emphasis upon safety-to-life features. State officials are now thoroughly familiar with fire conditions in all of the property. On a smaller scale, a similar service has been developed in Oklahoma, and a state-wide program of like nature is under way in Kentucky at the present time.

A Fire Prevention Play

Fire prevention committees of Chambers of Commerce are always thinking of original ideas. In Kansas recently a very good fire prevention play was created and effectively used at a regular luncheon club meeting, the cast being supplied from the club membership. The play, however, is not suitable for general use, but gives rise to the hope that some bright fire prevention mind may develop something suitable. In another Kansas town, through the co-operation of the Boy Scouts, every Christmas tree sold in the city was tagged with a bright red card, upon which was printed a wish that the purchaser would have a Merry Christmas, and also making a number of practical suggestions as to the safe use and disposal of each tree. Speaking of Boy Scouts, still another city assigned to them the task of back yard and alley inspections in connection with a city-wide inspection campaign. Doubtless the Contest Grading Committee at this point could supply a large number of original publicity ideas from the long list of reports which they have just been grading.

Fire Prevention in the Schools

Fire prevention school work continues to play an increasingly important role. A few months ago I came across an unusual idea as operated in the schools of

"Every morning the Fire Department telephones to the Superintendent of Schools and reports on all fires of the day previous. When each school receives these reports they are referred for discussion to the class in current events, which then studies the causes of the fires and learns how they could have been avoided."

Nashville, Tenn. Every morning the Fire Department telephones to the office of the Superintendent of Schools and reports on all fires of the day previous. These are then sorted as to location and the particular data with reference to each school district is then telephoned to the principal of the school in that district. An especially interesting fire is reported to all districts. When each school receives these reports they are referred for discussion to the class in current events, which then studies the causes of the fires and learns how they could have been avoided. Much interest is generated in this up-to-the-minute material.

Another Tennessee city recently staged a school poster poem contest. As indicated, it was not only necessary for the young artist to draw or paint a picture, but he also had to compose an original verse with reference to it. Still another interesting use of school pupils in fire prevention education occurred during last Fire Prevention Week in Oklahoma. There the general public speaking program was very materially augmented by sending out to some city, as well as rural schools many high school pupils who were taking work in public speaking, and who had been especially trained along fire prevention lines. It will be readily seen that the number of persons who listened to the fire prevention story was greatly multiplied.

Use of Home Inspection Blanks in Schools

The use of home inspection blanks in schools is growing rapidly. In addition to the thousands of these blanks distributed elsewhere our one department has supplied over six hundred thousand of them in our limited territory alone since August first last, not to mention eighteen thousand for use in the rural districts.

Week Among the Fire Departments

Suppose we take a snapshot at the fire department. Here is an interesting clipping dated at Washington, March 7. "Flying fire-boats to fight disastrous forest conflagrations have been adopted by the Canadian Government, it has been learned by the Commerce Department. The planes will be two-motored all-metal flying boats, carrying two pilots, a mechanic and seven fire fighters." This is simply illustrative of the amazing evolution through which the modern fire service is progressing. The report of the Fire Service Extension Committee is most illuminating on the spread of fire prevention educational methods in fire departments themselves. From St. Louis comes the report that daily a member of the Department broadcasts a radio talk over one of the prominent stations of that city. In several of our larger cities we find fire departments and salvage corps aiding industrial plants in organizing their own private salvage companies in addition to their fire brigades. In Chicago experiments are being conducted with a metal model of a building equipped with manually operated floor and roof openings. In this miniature building fires are to be built for the purpose of studying proper methods of ventilation. It is hoped that this model and duplicates will soon be available for instruction purposes at the various short courses. The fire service is contributing its full share toward fire prevention education.

The Railroads and Newspapers Help

It also may interest you to know that the Chicago, Milwaukee, St. Paul and Pacific Railroad is equipping a large number of its locomotives with a water pump and a generous supply of hose for use as a fire-fighting machine for railroad property.

Newspapers are now for the most part very friendly toward fire prevention news, in many cases opening their editorial columns to the subject. Some of them have gone much further. A junior fire brigade has been fostered by the Baltimore *Sun*. Last spring the Chicago *Daily News* copied the Baltimore plan and culminated their program with a giant fire show at Soldiers' Field, which was witnessed by ninety thousand Chicago children. The same paper intends to stage a similar campaign this year.

A growing tendency to exhibit fire prevention booths at fairs and conventions should be noted. Several of these booths have been effectively employed at state fairs, farm conventions, better homes shows and elsewhere. The National Fire Protection Association is planning a pamphlet containing photographs of many of these exhibits, as well as suggestions for building and operating them.

(From a paper read before the National Fire Waste Council at its meeting at Washington, D. C.)

Engineers Discuss N. Y. Fire Alarm

Before an audience of eight hundred members and guests of the New York Chapter of the American Institute of Electrical Engineers, Fire Commissioner John J. Dorman, Chief Peter C. Spence of the Bureau of Fire Prevention, Assistant Chief Thomas F. Dougherty and Assistant Electrical Engineer William F. Hennessy of the Fire Alarm Telegraph Bureau—all of the New York Firt Department—explained in an abbreviated way the activities of that department on Friday evening April 25th.

The meeting of the engineers was opened by Prescott Charlesworth, vice-president of tht Bell Laboratories, who extended the invitation. Commissioner Dorman spoke in a general way from the administrative standpoint; Chief Spence delivered a most enlightening address on Fire Prevention; Chief Dougherty explained the fire extinguishing activities of the department and cited some of his own experiences which seemed to hold the audience intensely and Mr. Hennessy closed the oral fireworks with as simple and as understandable an explanation of what at best is always a complicated and confusing subject to the layman—the fire alarm system.

Following this, there was seen and heard about 1,000 feet of movietone made through the courtesy of the Fox-Hearst studios. It opened with an address by the Fire Commissioner and followed on with movietone of the fire alarm central station in Queens Borough of New York City, the School of Instruction, various responses tc alarms of fire, shots taken at actual fires, the department's ambulance in action at a large fire, the inside of the firm alarm central station handling an alarm of fire and other features of fire fighting of lesser importance.

WM. JEROME DALY.

Eastern Fire Alarm Men Meet

The April meeting of the Eastern Association of Superintendents of Fire and Police Telegraph was held at the Fire Alarm Headquarters in the Fenway, Boston, Mass. A dinner and round table discussion took place at the Hotel Kenmore.

Among the speakers were Harold S. Walker, field engineer of the National Fire Protection Association, who read a paper on "Mutual Aid from the Fire Alarm Standpoint"; C. H. Smith, engineer of the Westinghouse Electric Company, who spoke on "Dry Rectifiers as Applied to Fire Alarm Systems"; and G. K. Thompson, of the Jewell Electrical Instrument Company, of Chicago, who discussed "Designing Test Instruments for an Age of Speed."

HARRY BELKNAP.

Layne Fire Alarm Superintendent of Denver—Edward L. Layne, assistant fire and police alarm superintendent of Denver, Col., has been placed in charge of the system. He succeeds David Reed who died last summer.

Many Apply for Denver Jobs—According to the Civil Service Commission of Denver, Col., there are 325 applicants waiting to join the fire department.

Massachusetts Considers Gasoline Rules—The Massachusetts legislature is considering a bill relative to the keeping, storage, use, manufacture, sale, handling, transportation or other disposition of gasoline and other petroleum products, other than in connection with garages.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

POLICEMEN can be of great assistance to a fire department. This department, like the fire force, is organized to save life and property, although the problem is attacked from a different angle.

Whenever a fire alarm box is pulled and fire apparatus speeds on its way, a traffic problem arises. There are always a number of the younger element who desire to race the fire companies. And then at the fire itself, crowds can not control their curiosity.

Where the two departments are organized to be of mutual assistance to each other, police respond to each fire call to lessen the work of the fire department.

There are many possible assignments for policemen at a fire.

The problem in full that is treated in this issue appears in the box on this page. In the box on the following page is the question that will be discussed in the next issue. Should you have some comment that you would like to add to the next question or if you have a problem that you would like to see discussed in this department, write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

What suggestions have you for better cooperation between police and fire departments to save life and property, and to reduce fire losses?

The Question

Many chiefs report that the best cooperation possible exists between the two departments. In order that there be a better understanding of their common problems, round table meetings are sometimes held and any possible differences ironed out.

John J. Towey, Chief, Newark, N. J.: On all second or greater alarms of fire the police are ordered to keep all pedestrians and traffic at least a block away from the fire, in order for the fire department to work without interference. The opening up of traffic for fire apparatus en route or returning from fires is speeded up by the location of gongs at most all the principal street intersections of the city where traffic officers are stationed. All traffic officers carry a list of the different fire stations, their location, etc.

Where there are signs of a suspicious fire, the police department is asked to take photographs from different angles and submit them to the fire department. If the case proves as suspected, the guilty person or persons are arrested and the pictures used as evidence. Where there has been a series of false alarms, the police department is notified and a man detailed from the precinct in which locality the box is located; also, a man from one of the fire stations in the battalion district in which the box is located; both being in civilian dress. The box is watched at all times until the guilty party is caught or until such time as the false alarms stop coming in. In this way, nine times out of ten, the guilty person is caught and arrested, fined or sent away for a term to prison. The amount of false alarms will be kept down.

Every now and then the chief of the police and fire departments have a conference to exchange views as to methods of saving life and property; in other words, the chiefs of these two departments should work together.

In an arson case, we have what is known as the arson squad, consisting of two firemen from the Bureau of Combustibles and Fire Risks and two policemen working together in civilian dress, and it is surprising to see what evidence they compile.

On all fire alarms (first or greater) there should be a police ambulance responding with the fire apparatus; this is in the event of accidents or where someone has been burned or injured. It also saves time where medical assistance is needed.

When fire apparatus rolls into a fire, and should the men stretch in any hose, the police are instructed to allow no one to drive over it. In the event of anyone driving over hose while stretched in the street he is arrested and fined. These instructions are enforced whether the men are put to work or not at a fire.

J. W. Fisher, Chief, Dubuque, Iowa: I believe that the plan as followed in Dubuque will work very satisfactorily in any average city. To begin with, both departments co-operate in all matters where such cooperation is necessary to safeguard lives and property.

Our telephone system connects all fire and police stations. In this manner police headquarters is notified of all fire calls transmitted over the telephone and immediately sends a car with two or more police officers to the fire.

Upon their arrival, the police officers prevent all other than remen from entering the building on fire, they clear lanes for the approach of fire apparatus, establish fire lines when necessary and assist in removing people from burning buildings.

On box alarms, our alarm headquarters immediately informs police headquarters of the alarm, and they proceed as in the case of a telephone alarm.

The police department co-operate in the same manner when the services of our department are necessary; this very often happens in accident cases, hazardous building conditions requiring immediate attention, etc.

We have endeavored to remove all friction between both departments and by so doing have eliminated obstacles that heretofore reduced the combined efficiency. Police are very active on false alarms, and during the past year have made several arrests. The fact that they are on the ground at the same time as the fire department makes it much easier to locate the guilty party.

E. E. Laffen, Chief, San Bernardino, Calif.: I wish to state that this department receives splendid co-operation from the Police Department at all times. We have had the Police Department at our monthly departmental meetings for the purpose of discussing the different situations that confront each department while working at fires, etc.

There are three or four police officers assigned to answer all fire alarms in the high value districts, while motorcycle traffic officers and one officer from police headquarters respond to all alarms in the remainder of

the city. Our truck companies carry several bales of special rope for the use of the police in roping off the block in which the fire is located, and to keep the crowds back.

I find that both departments can work together in better harmony if they get together and discuss their problems, pointing out errors, which, of course, can be remedied should a similar situation arise again.

W. H. Fuller, Chief, Vicksburg, Miss.: In small cities where there is no fire marshal, I believe that some member or members of the police department should accompany firemen on their inspection trips, so that they too may familiarize themselves with the layouts of buildings, the fire protection equipment thereof, and its manner of operation.

Another instance where the police can be of considerable assistance to the fire department is in catching speeders, who upon seeing the fire department responding to a fire are desirous of learning further particulars and speed along after the apparatus. They can also stop the public from driving over fire hose and keep general order during the operation of the fire department in the extinguishment of the blaze.

Police can help keep down fire losses in their respective districts by notifying property owners of the accumulation of rubbish wherever such is noted. Rubbish accumulations are a menace to both life and property.

Wm. J. Lutz, Chief, Wilmington, Del.: We have the most hearty co-operation between police and fire departments at all times.

Traffic conditions of today require the police to act promptly when the first apparatus arrives at a fire in order that the traffic does not proceed any further and hold up other companies that are due in; also to prevent running over hose lines.

In this city police respond with reserves, patrol wagon, and ropes, and immediately rope off the street in the vicinity of the fire. An ambulance also responds which carries two pulmotors.

John A. Kennelly, Chief, Ridgewood, N. J.: Fire and police departments can co-operate in numerous ways to save life and property, such as being on the alert to discover a fire and send in alarm as quickly as possible, arousing the occupants of the fire building (if occupied and fire occurs at night) and assisting them to a place of safety.

Also, by regulating traffic so that the fire department while responding with their apparatus will meet with the least possible delay in reaching the scene of the fire; by establishing and maintaining fire lines so as not to hamper the department in getting hose lines, ladders, etc., into operation as quickly as possible, or hinder their operation during the extinguishment of the fire.

Persons other than members of the fire or police department should be prevented from entering burning buildings or adjoining buildings which may not be on fire but which have been vacated by their occupants as a safety measure. This step will prevent robberies which have been placed on the fire department in the past.

Thos. J. Nicholas, Chief, Camden, N. J.: I find that our present plan is working out very satisfactorily. Commanding officers make all fire inspections of the district to which they are assigned, and report all hazards found to the chief of the department. If conditions are not up to the standard, the owner is given an allotted time to make good and should he fail to comply with the order, he is guilty of a misdemeanor and shall upon conviction pay a fine of $25.00 for each offense.

Members of the police department report to the Bureau of Fire any hazardous conditions which they may find about either vacant or occupied properties. It is this co-operation with the police which I believe helps to keep our fire losses way below par.

Frank Dickinson, Chief, Brockton, Mass.: Our police department co-operates with us to the fullest extent. A Police Department ambulance responds to all fire alarms and is in charge of two police officers whose duty it also is to establish a fire line. Should the fire be of considerable proportion requiring the sounding of a multiple alarm, a large detail of police respond.

With such splendid co-operation existing between our departments, I can see no need for further improvements in this respect at the present. With regard to malicious fires and false alarms, our police are very helpful in making diligent investigations.

F. J. Ostertag, Chief, Burlington, Iowa: We get very good co-operation at fires from our police department. At every fire in the business district we have several patrolmen on duty maintaining a fire line and stopping all automobile traffic in that block.

A motorcycle officer and one patrolman answer all alarms in outlying districts. I believe that more stringent laws should be adopted in regard to automobiles following fire trucks, also parking in the vicinity of a fire. All automobiles should be forced to pull to the curb when hearing the approach of fire apparatus.

W. W. Walker, Chief, Summit, Ill.: Vigilance of police, especially those on night duty in detecting and reporting fires promptly; rendering aid as occasion requires under circumstances either in awakening and assisting of occupants of building to points of egress or quelling fire until arrival of fire department, will go a long way toward saving of life and property.

In many communities the fire force is respected while the police are looked down upon. Such a condition is detrimental to firemen in the discharge of their duties through lack of co-operation of police department in rendering prompt and efficient aid.

H. M. Topping, Chief, Whittier, Calif.: The fire and police departments should co-operate one hundred per cent with each other, as both departments are equally responsible to its citizens in saving life and property. Petty jealousy of any and all nature should be eliminated, and to accomplish this, each respective chief should have a thorough understanding with his fellow chief of the department co-operating with him. Each chief should of course govern his own department, respect each other's responsibilities and not infringe thereon. Members of both departments should be instructed to assist each other in time of need, and should this order not be carried out, failure to do so should be reported to the chief of the department to which the offending party belongs. The chief upon receiving such a report should act without fear or favor. Such a plan, I believe, would eliminate all misunderstandings between the departments and promote greater harmony and goodfellowship between all concerned.

H. R. Delfs, Chief, Lansing, Mich.: I will not attempt to offer any suggestions on this question, but will merely relate the manner in which co-operation between these two departments is carried out.

Lansing, Michigan, is a city of over 100,000 population, and police respond with all alarms except the still alarm. Two or three policemen respond with patrol wagon, and if this is not available, another car is substituted. These officers take positions to control traffic, assist in life saving or transportation of injured firemen or citizens to hospitals, or any other service we might ask of them.

Co-operation between the two departments is 100 per cent, and has been such for the past twenty years.

A. E. Wilcox, Fire Marshal, Ontario, Calif.: Ontario is a city of about 16,000 population, with its police and fire headquarters situated in the same building. Whenever possible, a policeman responds with fire truck and a traffic officer follows on motorcycle to take care of traf-

(*Continued on page* 384)

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Do you attempt to get publicity for the department?

Do you believe that frequent write-ups in the local newspaper tend to create a better understanding of fire department matters?

What has been your experience with newspapers?

With the Editor

Insuring Firemen Against Liability

It has come to be recognized as a point at law that the driver of a fire apparatus can be held personally liable for the injury or death of persons in accidents in which the apparatus is involved. It has remained, as far as we know, for the city of New Britain, Conn., to take the initiative among the larger cities and protect their firemen through the medium of personal liability insurance.

In company with other Connecticut Fire Departments, the authorities of New Britain have long been endeavoring to persuade the members of the state legislature of the importance for action in this particular. But bills introduced into those bodies have all so far met with the fate of being either defeated or buried in committee.

Finally, tired of the delay and perhaps realizing the hopelessness of obtaining the desired laws from the legislators, the city, at the urgent representation of the Chief, took the initiative and made it legally possible for the city to cover the drivers of fire apparatus by liability insurance.

This action should suggest moves on the part of others of the larger cities. It is a serious matter for the men to be daily exposed to the danger of such litigation, from no fault of their own. No matter how careful they may be in their driving, an unwary or careless pedestrian may suddenly step in the path of an on-rushing apparatus or a motorist may come at high speed around a corner in the path of the machine. In spite of the fact that in either case, or in other similar ones, the injured party may be at fault, a suit is liable to be the result and heavy damages be assessed against the unfortunate driver. Such a case, if it goes against him, may result in the loss of his property and his financial ruin.

It certainly is the duty of the city to protect its employees of the fire department in this matter and the best and most logical way to accomplish this is by covering them by liability insurance of a sufficient amount to protect them against any legal action that may be brought.

The Menace from the Sky

The modern fire chief has to contend with many hazards of which his brother of the mid-Victorian era never dreamed. The automobile and its garage, the advance in chemistry and electricity, and many other contributions to this age of progress have greatly increased the problems he must face and overcome.

Now another has arisen, and it has come from the upper regions of the air. Recently a dwelling was destroyed by fire on Long Island, New York, in the vicinity of a flying field, when a plane traveling too low, crashed into the roof and burst into flames. In a small town in France this month two planes flying over it came together and both were precipitated downward on buildings. One of the machines fell upon a department store roof and did not cause any damage to speak of, but the other, in flames, crashed through the roof of a dwelling, destroying it through the fire which followed, and killing a chambermaid who was on an upper story of the house. The members of the family escaped. The pilot of the other plane, when it crashed on the department store roof, was catapulted out of the fusilage and fell through the roof of a parked automobile, fortunately unoccupied. Both pilots were killed.

The menace from the air is now over every city and village. No one can tell when a blazing plane may fall upon a building, causing death and fire, for with the motor running, as it usually is in such circumstances, there is pretty sure to be a blaze following such an accident. True, with the increase in efficiency of the plane, there is less likelihood of failure and disaster, but, on the other hand, with the prospective increase in flying, there are bound to be more careless individuals using planes.

The Prison Holocaust in Ohio

The worst of a series of fires in penal institutions throughout the country has just occurred in Columbus, at the Ohio State Penitentiary. This time the flames have resulted in the death of over three hundred prisoners, arising largely from what appears to have been the most inexcusable callousness and cruelty on the part of the prison authorities.

However this may be, the fact remains that the ancient structure housing these unfortunates was a ramshackle fire trap, a disgrace to the state of Ohio, and furthermore, that it was terribly overcrowded. It is said that there were 4,300 men herded into the building whose cell blocks were built to house 1,500.

The fire apparently was at least partly of incendiary origin. The individual placed in charge by the city Fire Marshal of the investigation of the causes of the fire said, "There really were four fires. Three of them undoubtedly were of incendiary origin. I would not care to be quoted at this time on the main fire. I have checked the electrical equipment. It could not have come from that source in my opinion."

The great loss of life in this latest prison fire seems to have arisen from two primary causes.

First, that the cell blocks were constructed in a most inflammable fashion. The roofs of the cells, testimony shows, were of tarred material and burned fiercely when exposed to the flames, spreading the fire with great rapidity. The second contributory cause of the mortality among the prisoners was the stubbornness of some of the guards, one of whom refused to unlock the cell doors or give up the keys, claiming he had received no orders to do so from his superior. The keys were wrested from him by other guards, who were more humane, but by that time it was too late to rescue the men, owing to the rapidity and fierceness of the flames.

It is a lamentable fact that Ohio is by no means alone among the states as regards the fire conditions in penal institutions. It is safe to say that the arrangements in many parts of the country in this respect are deplorable, though, fortunately, they are gradually improving, as the old structures become too delapidated for occupancy.

However, this condition should not prevail in any civilized community. The authorities—Federal, state and city—should not wait for the old prisons to rot into unusable condition before they are replaced. A movement should be started to abandon all such institutions at once and erect buildings that are thoroughly fire resistent and safe, and which are commodious enough to house the inmates without crowding.

Only by such movements on the parts of the authorities will the heartrending and disgraceful occurrences of the past year or so—culminating in the Columbus disaster—be avoided.

Iowa Firemen to Meet in June—The 1930 convention of the Iowa Association of Fire Fighters will be held in Marshalltown, June 4 and 5.

Chief Hoy Re-Elected for 32nd Year—Chief Peter V. Hoy of Norristown, Pa., was re-elected Chief for the thirty-second term. There was no other candidate for the office.

The Result of An Overloaded Warehouse

Part of a four-story warehouse in Cincinnati, Ohio, buckled under the weight of 3,500 tons of roofing paper. Two persons were killed and seven others injured, as a result. Rolls of paper fell on the railroad siding and covered freight cars as illustrated.

I. A. F. C. Issues Tentative Program

A well balanced program has been arranged for the chiefs who will visit Winnipeg, Canada, to attend the annual convention of the International Association of Fire Chiefs, September 9-12. Many entertainment features have been included to prevent too technical a meeting.

Nor have the ladies been slighted. They will be entertained at bridge, at tea, with a tour through the shopping center, as guests of the Winnipeg Jockey Club, and by a banquet and ball.

Ladies who do not desire to attend the race meeting will be guests of the local committee at Tuxedo. The ball has been arranged for the first evening of the convention, as it has been found that the dance furnishes an excellent means of meeting other guests and chiefs at the convention.

An outline of the program follows:

Tuesday, September 9.

10 a.m.—Opening Session—Address of Welcome by the Mayor, etc., and Memorial Service in the Capitol Theatre, Portage Avenue.
12 Noon—Official Photograph—Parade of Fire Department.
2 p.m.—Educational Program of the International Association of Fire Chiefs.

Wednesday, September 10.

9:30 a.m.—Educational Program of the International Association of Fire Chiefs.
2 p.m.—Educational Program of the International Association of Fire Chiefs.
8 p.m.—Round Table.
11 p.m.—Stag Smoker (Optional).

Thursday, September 11.

9:30 a.m.—Educational Program of the International Association of Fire Chiefs.
1:30 p.m.—Leave Headquarters to visit Exhibits at the Armories.
6:30 p.m.—Banquet tendered by the City of Winnipeg at Headquarters Hotel.

Friday, September 12.

9:30 a.m.—Morning Session—Business, reading reports, etc.
2 p.m.—Guests at Horse Race meeting and seeing Winnipeg or picnic for men at City Park (Optional).

Ladies Program

Tuesday, September 9.

2 p.m.—Mrs. Boulden and Ladies' Committee will entertain at tea for a "get-together" on the Mezzanine Floor, Hotel Headquarters. Also Ball for evening.

Wednesday, September 10.

10 a.m.—Visiting shopping centre.
2 p.m.—Guests of the Winnipeg Jockey Club at Race Meeting.
8 or 8:30 p.m.—Bridge Party on the Mezzanine Floor.

Thursday, September 11.

10 a.m.—Seeing Winnipeg.
1:30 p.m.—Exhibit Hall.
6:30 p.m.—Banquet.

Friday, September 12.

10 a.m.—Guests of Ladies' Club and Luncheon at Noon.

Ohio Chiefs to Meet in Portsmouth

The annual convention of the Ohio State Fire Chiefs' Association will be held in Portsmouth, June 10-12. June 11 has been set aside as Exhibitors' Day and no meetings will be held. The practice was started at the Sandusky convention last year and received such enthusiastic approval from the many manufacturers, that it has been adopted as standard practice.

This year there will be over 15,000 square feet available for exhibits, or twice the number of square feet that the association had last year. Space is available in blocks of nine by ten feet, ten by twelve feet or ten by thirty-four itself might have been treated with the ingredient before the municate with Chief Joseph H. Speddy, Lakewood, Ohio, Chairman of the Exhibit Committee.

Colorado Firemen Set Meeting Date

The 1930 convention and tournament of the Colorado State Firemen's Association will be held in Salida, July 3-5. There will be no fire college in connection with this convention.

Wellfleet, Mass., Buys Pumper—Wellfleet, Mass., has purchased a pumper.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Nozzle Pressure Calculations

To the Editor:

Will you please publish the solution to the following problem in the columns of FIRE ENGINEERING:

Two engines are sending water through two 2½-inch lines to a "streetjack" equipped with a 1½-inch nozzle. The friction loss figure usually taken here for the "jack" is 10 pounds. The first engine is pumping at 165 pounds through 100 feet of hose to a siamese connection at the "jack" and the other engine is pumping through 400 feet to the same connection with an engine pressure of 185 pounds.

What is the correct method of figuring this problem to find the nozzle pressure and discharge at the nozzle and the pressure and discharge each engine is putting into the siamese connection?—E.F.C.

Answer: There is no simple method of solving this problem to get accurate results. An approximate method of solving the problem is to average the engine pressures, average the two hose lines and then solve for nozzle pressure. In other words your average engine pressure would be 175 pounds and the average length hose line would be 250 feet. You would assume a layout of two engines each pumping through a line of 2½-inch hose 250 feet in length, and pressure at each engine being 175 pounds. The two lines would be siamesed into a single pipe with 1½-inch tip.

After the nozzle pressure has been determined, then the pressure drop in each line would be found by subtracting the nozzle pressure from the engine on that line. With this friction loss known, by employing the formula: Friction loss in 100 feet of 2½-inch hose = 2 x Q x Q + Q, (where Q is the hundreds of gallons flowing per minute) the quantity flowing through each line might be roughly determined.

As noted above this method of solution is only an approximate one.

Determining Flow from Vacuum Readings

To the Editor:

Will you please inform me at your earliest convenience through your valuable journal, the formula and example for obtaining the quantity of water with various sizes of suction hose and depth of lift, from the reading of vacuum gauge of engine when drafting.—E.B.

Answer: There is no known means of determining the quantity of water which is being taken by an engine based on the vacuum reading, and when suction hose diameter and water lift are known.

In its final analysis the problem would be to determine the flow through the suction hose when the friction loss in this hose is known.

Due to the fact that friction loss in suction hose is very small, on account of the large diameter of the hose, and the short length employed, any flow figures which would be gotten through friction loss in the hose as determined by the vacuum gauge would be most inaccurate. A very slight change in friction loss in the suction hose would represent a large change in the quantity of water flowing, and as vacuum gauges do not record, or cannot be read, accurately, the results secured by such a method would be practically worthless.

Water Supply for Fire Protection

To the Editor:

We have a girls' college here in our district, but out in the country 3 miles, where we are trying to get some fire protection, they had 2 inch wells driven and coupled together for hooking our fire engine to, but when we went out to test it, we found the water level was 14 feet, making a lift of 16½ feet to pump. We were unable to draft this water.

I wonder what other method would be practical to have a supply of water. There is a lot of valuable property out there and to use a tank for storage it would have to be very large in order to do good.

Is there anything you can suggest that would help us solve the problem. To dig a cistern or reservoir we would have the same lift from spring level.

Thanking you in advance,

Yours truly,
J.K.S.

Answer. If the lift is only 16½ feet, I cannot see why your engine is unable to draft water, unless it is in very poor condition.

A fire engine in good condition may be expected to lift water 25 feet vertically. There are records available which show an engine lifting water 28 feet by suction.

The arrangement you have should be satisfactory for delivery of moderate size streams, provided the size of cisterns or wells is sufficient to insure adequate storage.

While an elevated tank of sufficient capacity would be more satisfactory, it will represent a very much larger outlay and you have then to provide a pump for maintaining the water at the proper level in the tank.

If you are certain the ground water level will not fall at any season of the year so that you would have a lift greater than 20 feet, and if your pumper is in good condition, the layout you already have should answer your purpose.

Relative Danger of Explosives

To the Editor:

I have been a reader of your magazine for several years and feel so confident that information given is correct that I make an appeal to you for an answer to a question given at an examination for senior fire inspector, which was held recently in this city. As the question was to be answered either "true" or "false," it was naturally presumed that all angles had to be considered. The question is as follows:

T.F. Black gun powder is more dangerous to handle than T.N.T.

I will appreciate your reply.

S. A., Seattle, Wash.

Answer: This question should be answered "true."

T. N. T. is mildly sensitive to shock and less liable to detonate upon ignition than black gun powder. Furthermore, T.N.T. as commonly found is in metal containers and is rarely encountered in bulk.

As a specific example, at a train wreck four or five years ago a car containing T.N.T. was involved by fire. The T.N.T. burned without detonation. A year later a car containing black gun powder took fire in a wreck above New York City, and "went off", bursting windows in houses even a mile away from the scene of the accident.

Solution Volume in Extinguisher

To the Editor:

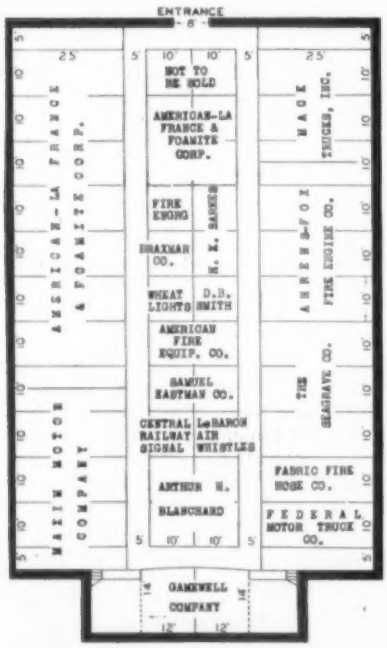
I would appreciate it very much if you would answer the following question pertaining to the soda and acid type of chemical tank. In charging the

tank you use 35 gallons of water, 16 pounds of bicarbonate of soda, 2 pounds (liquid) sulphuric acid (66 degrees). Upon "breaking" the extinguisher, would this chemical solution have a tendency to increase gallonage, or would it remain 35 gallons as first charged?—R. M.

Answer: There would be a slight increase in volume upon mixing the acid with the soda solution due to the volume of the acid itself. However, this result would be but temporary once the nozzle were opened. But there is another fact which enters into this problem. The moment chemical reaction takes place myriads of small bubbles of carbon dioxide gas are created due to the mixture of the soda solution and the acid. Some of these bubbles, remaining in suspension in the solution will increase its volume a little. The other bubbles passing through the solution from the bottom to the top surface, will cause an apparent increase in volume of the liquid. In other words you will have a mixture of water and free carbon dioxide gas (although the gas is in the state of motion rising to the top surface) which mixture has a greater volume than the mixture of the bicarbonate solution alone. Incidentally, it is this gas rising to the top which creates the "cushion" necessary for forcing the solution out of the tank.

N. E. Exhibit Space Sold

All of the exhibit space in the Rutland Memorial Armory has been rented for the coming convention of the New England Association of Fire Chiefs which will be held in Rutland, Vt., June 24-27. Chief Daniel B. Tierney, Arlington, Mass., is chairman of the exhibit committee.



Space Rented for Rutland Exhibits

Manufacturers using large amounts of floor space include the Maxim Motor Company, American-LaFrance & Foamite Corporation, Seagrave Company, Ahrens-Fox Fire Engine Company and the Mack Trucks, Inc.

The armory is within one hundred yards of the place in which the business and technical meetings will be held. One whole day of the convention has been set aside to permit visitors to inspect the displays without missing any of the scheduled meetings.

Besides Chief Tierney, the other members of the exhibit committee are Chief Alfred Koltonski, Rutland, Vt., and Chief Henry Collin, Proctor, Vt.

Fire Station Opened in Kingston, Tenn.—A new fire station has been opened in Kingston, Tenn. Chief C. M. Johnson is very proud of the new building.

Hempstead, N. Y., to Erect Fire House—Bids have been received for the construction of a new fire station in Hempstead, N. Y.

Chief Walsh in Charge of Building Inspections—Assistant Chief Patrick Walsh of the New York Fire Department, in addition to his other duties, will assume the supervision of all building inspections (except places of Public Assembly) required to be made by the uniformed force. He will report, in writing, to the Chief of Department and the Fire Commissioner, all derelictions of duty found.

"Smoky Joe" Succumbs at Fire

Assistant Chief "Smoky Joe" Martin of the New York Fire Department succumbed at a three-alarm fire which kept firemen busy for nearly two hours.

The building on fire was an old five-story brownstone house with a mansard roof. It is located in a skyscraper section given over largely to the novelty and garment trade. The fire was confined chiefly to the upper three floors used as storerooms for antique furniture.

Chief "Smoky Joe" Martin Being Helped From Fire Zone

The first alarms was sounded a little after 2 p.m., when Fifth Avenue was crowded.

Six firemen were injured when they attempted to carry a hose line up the rear with a tarpaulin over their heads. The third floor ceiling collapsed and half buried them. In addition, a torrent of water from above swept them down the stairway. Their shouts for aid were heard by Chief Martin and a squad sent to bring the men out.

When the fire was almost out the chief's knees sagged and he was helped to a nearby hallway where Dr. Harry Archer, Fire Department Surgeon, administered oxygen and urged his patient to go to a local hospital.

Three-Alarm Fire at Which Chief Martin Collapsed

Later motorcycle police opened a lane through traffic and Chief Martin was rushed in an ambulance to his home.

Capt. Spillane in Charge of Denver School—Captain Frank J. Spillane of Rescue Squad No. 4 has been placed in charge of the Denver, Col., fire department school. Before taking up his new duties, he will attend the Los Angeles Fire College.

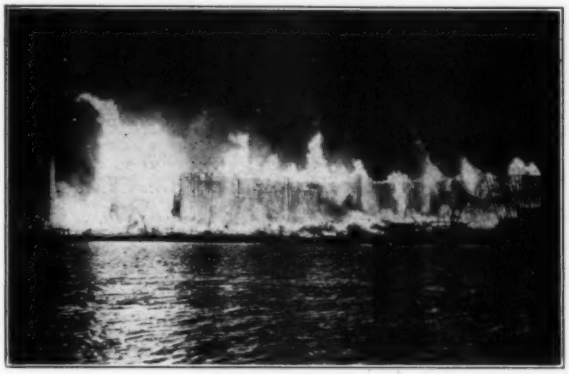
Lompoc, Cal., to Make Bid for Convention—Lompoc, Cal., is to make a bid for the 1931 convention of the Southern California Fire Chief's Association. The association meets in June and in January. The forthcoming meeting will be held in Glendale.

EMBERS FROM ICE HOUSE FIRE START 27 BLAZES ON ROOFS

Aid Rushed from Nearby Massachusetts Towns—Value of Mutual Assistance Scheme Demonstrated — Conflagration Avoided

By HARRY BELKNAP

THE value of fire department mutual aid was shown on the night of April 6 in Arlington, Mass., when the large ice houses on the shore of Spy Pond were destroyed in a general alarm blaze that illumined the sky for miles around. Embers carried by the wind caused twenty-seven different roof fires and a conflagration was threatened. Apparatus from eleven municipalities joined in fighting the flames or covering Arlington fire



Night Picture of the Fire That Destroyed the Ice Houses at Arlington

houses. Congestion of automobiles created a traffic jam that blocked streets and delayed fire apparatus.

Chief Daniel B. Tierney, of the Arlington Fire Department, handled the situation in a masterful manner and won unstinted praise for his skilful direction of the forces under his command. He sent the out of town companies to strategic points to leeward of the fire and concentrated efforts of the firemen in saving cottages adjacent to the blazing ice houses.

A telephone call was received from an unknown person reporting the fire in the Linwood Street ice houses. Box 16 was sent out at 7:03 P.M., followed by a second alarm ordered by Capt. Kennedy from the same box at 7:05. Box 16 was sounded a third time at 7:08 and a general alarm was ordered from this box at 7:14. Box 271 was sounded at 7:19; a second general call was given from Box 361 at 7:23; and alarms were sent from Box 36 at 7:27 and 7:30. The recall was at 2:29 A.M.

Besides additional Arlington apparatus, engines from Somerville, Medford, Winchester, Lexington, Belmont, and Cambridge responded on the second alarm under the mutual aid system and these same places sent additional apparatus on the general alarm. Sparks were causing so many fires that help was called from Malden, Everett, Woburn, and Waltham.

At the fire were Deputy Chief George W. Corbett and forty Arlington firemen; Chief Joseph E. Cribby, Deputy Chief Hathaway and twenty firemen from Somerville; Chief Philip A. Ham and sixteen firemen from Everett; Chief William H. Hill and ten firemen from Belmont; Chief David A. DeCourcey and ten firemen from Winchester; Chief James M. Casey and twenty firemen from Cambridge; Chief E. W. Taylor, Deputy Chief Wood and Assistant Chief Hooper with thirty-three firemen from Lexington; Chief Thomas A. Qualey and fifteen firemen from Medford; Chief George L. Johnson and eight firemen from Waltham; Chief John T. Nicolls and eight firemen from Malden; and Engine 1, of Woburn, with eight firemen. Apparatus from Billerica and Concord moved in to cover Lexington and Lowell sent a piece of apparatus to cover Billerica.

Among the apparatus that rendered valuable service were the following: Engine 1, Engine 2, and Ladder 1, of the Lexington Fire Department, these companies working at seven different fires using 1,350 feet of hose, 170 feet of ladders, two booster tanks, and two rubber covers: Engine 1, Engine 2, and Ladder 1, of Medford: Engine 6, Engine 4, and Ladder 3, of Somerville; Engine 2, of Waltham; Engine 1 and Ladder 1, of Everett, these companies working on Whittemore St. and Russell Terrace; Engine 1, of Malden, which worked at three fires on Whittemore Street; Engine 4 and Engine 8, of Cambridge; Engine 1 and Engine 2, of Winchester; and an engine from Belmont, and Engine 1, of Woburn.

Lines from chemical and booster tanks were used effectively on roof fires. The coal and wood yard of Peirce and Winn was on fire in several places as was the stable of George Clark. There were roof fires on several factories and many automobile tops ignited from sparks.

Engine 1, of Arlington, and Engine 4, of Cambridge, drafted water from Spy Pond. The Arlington fire department laid 4,200 feet of 2½ inch cotton rubber lined hose. The nozzles used were 1⅛ inch and 1¼ inch with one 1¼ inch tip on a Eastman deluge set. Post hydrants were used with an average pressure at the hydrants of 50 pounds, the water coming from a 60 inch main of the Metropolitan water system.

Three houses on Belknap Street and two houses on Linwood Street were damaged by the flames. The loss on the ice houses was estimated at $100,000 including the loss of machinery and 700 tons of ice. The loss to cottages amounted to $15,000.

Awnings on stores on the main street of the town caught fire. Embers were carried for a half mile. A large crowd was attracted to the scene and Boston newspaper offices were swamped with telephone calls from all surrounding communities inquiring where the fire was.

Three Alarms Sounded for Lumber Fire

Three alarms and two special calls were necessary to fight a lumber yard fire in Lexington, Ky., which was originally received as a telephone alarm. The first alarm was sounded at 7:10. Upon the arrival of the first companies, it was evident that the blaze was serious, and a second alarm was sent at 7:14, the third at 7:15, and two special calls at 7:45 and 9:14.

The first alarm brought three engine companies, a truck company and the Chief of the Third Battalion. The second alarm was answered by engines 17, 19, 15 and 12, Truck 3, and Water Tower 1. Chief Adams and Assistant Chief Stilz responded. The third alarm was answered by Engines 2, 4, 9 and 14, Truck 4 and a Battalion Chief. Two extra pumpers were also sent.

When the first companies arrived, the entire south and east sides were ablaze. These parts of the lumber yard were composed mostly of one-story sheds and stacked lumber piles. Directly across a thirty-foot street was a three-story building filled with lumber and machinery. At first all effort was centered in keeping the fire from reaching this building. The main handicap was a strong southwest wind which carried the flames into the center of the yard. Lumber was tacked on concrete walls about two feet high. Between and underneath these supports were dry grass and weeds which helped to direct the flames into the piles.

Within fifteen minutes after the first alarm, the entire

Lumber Yard Develops Into Serious Fire

yard was covered with hose streams and most of the outside sheds were knocked down.

By 10 p. m., most of the fire had reached the north end. Extra lines were brought into play. A dense yellow smoke enveloped the men—thirty-eight were overcome, and a few were removed to the hospital.

The great handicap was that the four streets surrounding the yard were unpaved and most of the apparatus became mired the mud. Good work on the part of the department prevented a serious conflagration.

East of the lumber yard was a three-story building housing

lumber and machinery while to the south was a large grain elevator. Northwest was another large lumber yard and directly north a railroad roundhouse with frame buildings.

A salvage corps man came in contact with a high-tension wire while inspecting sprinkler heads, and was killed. The property loss was about $192,000.

Historic Canadian School Razed

A blaze that started in the Victoria School, Winnipeg, Canada, shortly after the noon-hour recess, completely destroyed the two-story building valued at $26,000. It is

Children Watching Their Schoolhouse in Flames

the opinion of Chief Boulden that the fire started in the basement from a short circuit.

The fire was discovered about 12:30 p.m. About ten minutes later a second alarm was sent. As soon as the firemen arrived they searched the building for children who may have remained, but every one had left. Shortly after the firemen arrived they raised ladders to the roof, but later were forced to retreat. By this time the heat had become so intense that the fire-fighters were driven back.

A few minutes before 2 p.m. the gable at the west end of the school fell outward, taking a part of the wall along with it. The center tower collapsed. Early in the fight it was evident that the building was doomed, for a strong wind was blowing.

The school was one of the oldest in the city. It was erected in 1877 and an addition was added at a later date. The school was completely rebuilt into a two-story brick veneer structure with gable and tower in 1898. There were twelve classrooms.

Chief D. A. Boulden Has a Close Call

Here the chief is seen racing to escape an avalanche of falling bricks. He did not notice the tower give way, but he felt a draft from above and ran.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousand.

Week Ending April 18

CHICAGO, ILL.—Howard Street 5 and 10 cent store..... 40
BOTHELL, WASH.—Garage of Bothell Bus Co..... 40
LAKESIDE, MICH.—Summer home of Mikus Katz of Chicago.... 25
FREDERICTON, N. B.—Whse. of Chestnut Canoe Co. destroyed... 100
KINGSTON, ONT.—Harrison bldg. damaged..... 50
CHICAGO, ILL.—Bldg. of Meltzer Mfg. Co., Wood St..... 25
HUNTSVILLE, ALA.—Whse. of Alabama Cotton Oil Co..... 25
LANCASTER, PA.—David Miller plant, adj. property..... 25
PHILLIPSBURG, N. J.—Whse. of A. N. Leidy damaged..... 80
VINELAND, IDAHO.—Perry greenhouses damaged..... 80
ROCK ISLAND, ILL.—Foundry of Rock Island Plow Co..... 25
PONTIAC, MICH.—Automobiles in storage near Sq. Lake Rd..... 35
GRAND RAPIDS, MICH.—Whse. Old Pere Marquette R. R..... 25
BLUFFTON, IND.—Grand Theatre bldg. 30
IRVINGTON, N. Y.—Irvington House Cardiac Home destroyed..... 80
UTICA, N. Y.—Paul bldg. damaged..... 40
DIXON, ILL.—Whse. of S. E. Whellock Furniture Co..... 70
WEST LIBERTY, IOWA.—Farm property of J. Sindt, 8 mi. N..... 25
SUFFOLK, VA.—Peanut whse. of Pond Bros. Co..... 25
YAZOO CITY, MISS.—Moses Wholesale Grocery Co. bldg..... 125
EVANSTON, ILL.—Dwelling, 922 Main St..... 25
BEACH, ILL.—Property of Lawrence Amann..... 65
TEXARKANA, ARK.—Property of State Line Lumber Co..... 40
OKLAHOMA CITY, OKLA.—Whse. of Oklahoma Mill & Elevator Co. 75
MIAMI, OKLA.—Cardin Machinery & Elec. Co..... 80
ZANESVILLE, OHIO.—Ad-Post Service bldg. 45
BAY CITY, MICH.—Mill of Island Lumber Co. 40
TINGLEY, IA.—Several business establishments 65
BROOKLYN, N. Y.—Oil barge of Riley Kendall..... 25
ALPAUGH, CALIF.—School building damaged..... 30
BONNIE, ILL.—General store of A. N. Hicks Co..... 25
SHERIDAN, N. Y.—Plant of Chautauqua Seed Co..... 25
MADISON, ILL.—Property of T. Miefsky, 13th St..... 40
PROVIDENCE, R. I.—Ice house of Rhode Island Ice Co..... 60
RICE LAKE, WIS.—Business property damaged..... 60
MASONTOWN, PA.—Plant of Masontown Glass Co..... 100
BEAVERDALE, PA.—High school bldg. destroyed..... 80

Week Ending April 25

KILSYTHE, W. VA.—Power plant of McKell Coal Co..... 150
MADISONVILLE, KY.—Factory of Blanks Tobacco Co..... 25
EAST FAIRHAVEN, MASS.—Three planes of Sound Airways, Inc... 25
HOBOKEN, N. J.—Business property at 251 First St..... 25
McGREGOR, IOWA.—Dairy barn of C. F. Limbeck destroyed..... 30
DECKER, MAN.—Grain elevator of N. Bawlf Co..... 25
CENTERSVILLE, TENN.—Lunn Hotel, adj. business property.... 40
GAINESVILLE, TENN.—Business property of Geo. W. Brown.... 35
CHICAGO HEIGHTS, ILL.—Rau dept. store, adj. property..... 80
COLUMBUS, MISS.—Property of Mississippi Industrial School..... 30
SEATTLE, WASH.—Factory of General Illuminating Co..... 25
ORIENT, IOWA.—Business property damaged..... 25
IRON MOUNTAIN, MICH.—R. C. Church destroyed..... 65
CHARLES CITY, IOWA—Frederickson Bros. store bldg..... 25
HONEOYE, N. Y.—Business bldg. of E. L. Gilbert..... 35
CAMDEN, N. J.—Warehouse of Sitley & Son, Inc..... 30
JEWELL BAY, N. Y.—Oneida Lake Country Club..... 30
EASTON, Pa.—Paul's restaurant 25
ROCHESTER, N. H.—Rochester Hotel damaged..... 40
BINGHAMPTON, N. Y.—Dairy property of G. H. Tyler..... 80
HICKSVILLE, L. I. N. Y.—4 planes of Aviation Country Club.... 40
MONTMAGNY, QUE.—Bldg. of Montmagny Printing Co..... 35
NORWOOD, MASS.—Bldg. of Norwood Civic Association..... 100
HILLSBORO, ILL.—Kincaid bldg, destroyed 80
TCHULA, MISS.—City hotel, adj. business property..... 65
TARKIO, MO.—Tank station of Phillips Petroleum Co..... 40
EDERSVILLE, PA.—Tipple of Superior Mining Co..... 125
LIVINGSTON, TENN.—Business property damaged 125
ROCKVILLE, IND.—Parke County Asylum bldg. destroyed..... 25
EDGELEY, N. DAK.—Elevator of Wells Elevator Co..... 25
NEWCASTLE, TENN.—Harris Hotel destroyed..... 65
SUGAR LAKE, Mo.—Lakeview dance pavilion destroyed..... 40
CELINA, OHIO.—Bldg. of Brandts Furniture Co..... 45
TOLEDO, OHIO.—Northgate Manor Apartments damaged..... 40
LAKE CHARLES, LA.—Stock of Berden-Campbell Furniture Co.... 100
ORD, NEB.—Bldg. of Peoples Merchandise Co..... 50
MILWAUKEE, WIS.—Whse. of Cudahy Bros. Co..... 25
SCITUATE, MASS.— Four cottages destroyed..... 25
WORCESTER, MASS.—Sheds of J. F. Bicknell Lumber Co..... 150

New Apparatus for Osceola, Ia.—Osceola, Ia., has ordered a 500-gallon pumper for $5,800.

Wichita Completes Station Plans—Drawings have been completed for two new fire stations to be erected in Wichita, Kans.

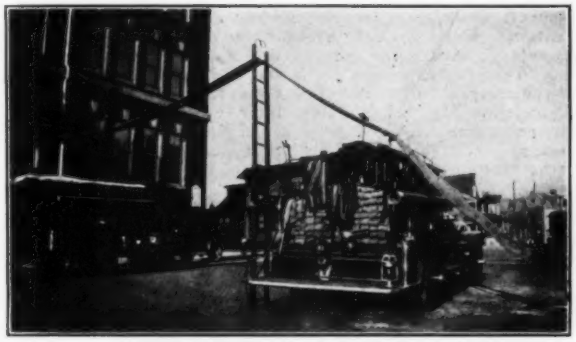
Iowa Association to Meet in June—The Iowa Association of Fire Fighters will be held in Marshalltown, Ia., June 4 and 5.

Some Unique Fire Department Tools

Several ingenious and novel devices have been developed by members of the battalion of Chief John Spencer, Staten Island, part of the New York Fire Department. The devices have been submitted to the Board of Merit Awards for its consideration.

In congested districts, one of the major problems at a fire is how to prevent a tie-up of traffic, and if traffic is to be let through, how to avoid cutting the fire hose. In some places pairs of blocks are used so that cars could ride over the hose without any appreciable damage to the lines.

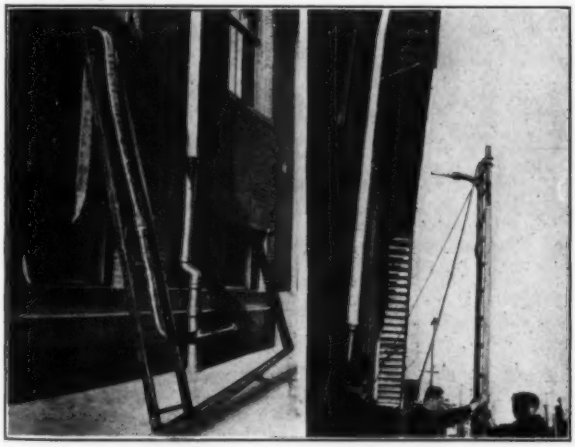
With the suggested method, one piece of apparatus is placed near the curb on each side of the highway to be crossed. Ladders are strapped to the apparatus, on the inner side in order to reduce the size of the span. The hose is then supported at two ends by means of the ladders and hangs in the form of a short curve over the highway. Traffic may pass underneath and the department is saved the task of worrying concerning the safety of its hose.



Stretching Hose Line Across Highway

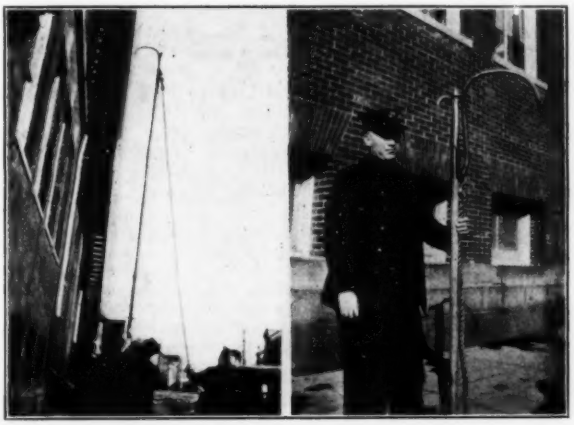
Another useful device is a piece of pipe bent in the form illustrated and fitted with couplings so that it may be attached to the hose line and fitted with the standard nozzle. The pipe carries a hook so that it can be hung from the rungs of a ladder.

With the pipe pointing downwards, the ladder, hose, pipe and attached nozzle may be lowered into a hole and the device made to serve as a cellar nozzle. The direction of the stream may be changed by moving the ladder. The pipe and nozzle may also be made to serve as a water tower by having the pipe pointing upwards, as illustated. The pipe is lashed to the ladder and the hose hangs downward. Here, too, the direction of the stream may be altered by operating the ladder. Ropes lashed to the top of the ladder tend to secure the ladder pipe against the reaction of the stream.



Two Views of the Bent Pipe in Operation

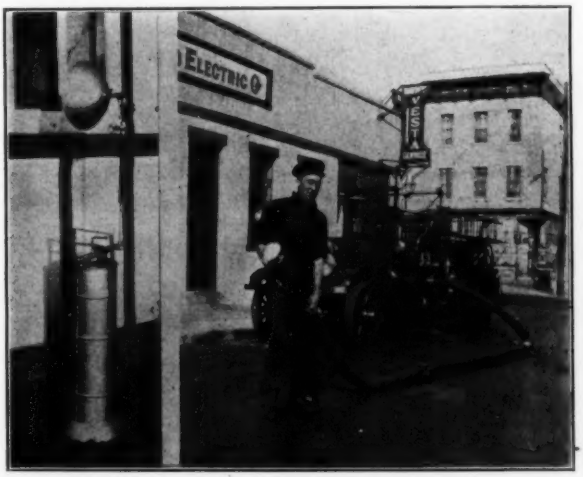
When using a carbide lamp, there is always some delay in exhausting air from the line before the combustible gas can flow from the burner. To speed the process of removing air from the burner, a pet cock was inserted in the feeder line near the reflector. Before the lamp is placed in service, the pet cock is opened for a few moments and the air is permitted to rush out. The pet cock is closed and the gas is directed through the burner, and ignited. The carbide lamps have been of great value at night fires.



Pull-Down Hook for Removing Obstacles

Any one handy with tools may fashion a pepper-box nozzle which is used in wetting down large areas. It is attached to a line from the discharge side of a pumper.

A pull-down hook is another useful tool. A hook has been designed that could be mounted on the end of a twenty-foot pole or pole of any convenient length, and used to pull down debris after a fire. The hook is hung on the object to be pulled down. After it is placed in position, several firemen take hold of the rope and give a sudden tug. Once the object has been loosened, it can readily be pulled down. This tool is used to clean up after a fire.



Left, Carbide Lamp Device Right, Pepper Box Nozzle

All of the devices and tools illustrated and described have been made by members of Chief Spencer's battalion on Staten Island.

Canon City, Col., to Buy Apparatus—Bids will be invited for the purchase of fire apparatus.

Egyptian Fire Fighters to Meet—The Egyptian Fire Fighters Association will hold their spring meeting at Nashville, Ill., May 8.

Kansas School to be Held May 19—The Second Annual Short Course will be held at Salina, Kans., May 19-23, with the cooperation of the Kansas State Firemen's Association and the University of Kansas. The 1929 legislature has authorized cities to take money from the fire department, water works or general funds for sending firemen to attend the schools arranged by the university.

NEW YORK OFFICIALS WITNESS FIREPROOF PAINT TEST

Three Small Wooden Structures Set on Fire, and All Were Destroyed, Except One with Two Coats of Fire-Resisting Paint—The Latter Only Scorched

MEMBERS of the sub-committee of Fire Commissioner John J. Dorman's Committee on Proposed Revision of New York City Ordinances, as a result of the fatal fire in a sound-picture studio last December, observed a fire test on Friday, April 18 last, of furolin, a fire resisting paint which proved pretty nearly all that its sponsors claimed for it.

The test was staged by the Potter-Franklin Corporation, New York City. It was held in a vacant lot at the foot of Degraw Street, Brooklyn, where three wooden structures 8 x 4 x 4 feet, of ⅞" white pine, roofed over, were set on bricks at each corner. One was painted with ordinary industrial or barn or fence paint, another was painted with house paint or linseed oil paint, and the structure in the center had two coats of furolin flat white which had been applied seven days before.

The observers were:—Fire Commissioner Dorman: Chief Engineer George W. Booth, of the National Board of Fire Underwriters; Chief Peter C. Spence, of the Bureau of Fire Prevention, who is chairman of the sub-committee; Assistant Fire Chief Patrick Walsh; Deputy Fire Chief John J. McElligott; Nicholas J. Kelly, for the Electrical Bureau of the Department of Water Supply, Gas & Electricity; A. R.

Remains of Three Test Houses Set on Fire to Demonstrate Fire Resistant Paint

Small, of the Underwriters Laboratories; L. B. Newell and G. Y. Lancaster, of the New York Fire Insurance Exchange, Mr. Wahlgren, of the New York Board of Fire Underwriters, and E. W. Fowler, of the National Board of Fire Underwriters.

The base of each structure was strewn with shavings and excelsior saturated with gasoline and then ignited. Flames raged for fifty minutes at the end of which the furolin painted structure was badly blistered and but slightly burned at the base, where the heaviest concentration of fuel was planted. The two other structures were completely destroyed, with the exception of the four uprights in each corner.

No official statement was issued, but the observers manifested an intense interest in the fire retarding features of the commodity. At least nobody said the paint did not do what it was supposed to do. It was suspected the flat white purolin was applied externally, but a fragment of that structure was later broken off and scraped of its fire resisting paint. The uncoated or natural wood ignited from a match flame, satisfying the observers that the wood had not previously been treated beyond two coats of the chemically treated paint.

It was freely admitted by sponsors of the product that they hope to have the New York City ordinances amended to compel the use of fire resisting paint on scenery, draperies, curtains, etc., in all places of public assemblage, as well as in studios, theatres, etc. City officials said that such a move would have to be initiated by the Fire Department, the responsible city agency in such a situation.

WM. JEROME DALY.

Southwestern Chiefs Hold Convention

About 150 fire chiefs of the southwest attended the third annual convention of the Southwestern Association of Fire Chiefs in Oklahoma City, April 14-16. Chief Goff, genial host, provided entertainment for the guests in a manner for which he alone is noted. President W. J. Springer, of Texarkana, had previously appointed fifteen committees, with instructions to prepare reports on as many subjects, and report at this meeting. The subjects were pertinent and of timely interest to all fire chiefs. All but four of these committees were represented, and the report showed careful preparation, they were well received.

Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, and Chief John Healey, of Denver, Colorado gave the feature addresses of the convention. Chief Healey stressed the value of a thorough knowledge of building construction as an asset in fire fighting. President Springer and Chief Taplin gave brief reports of the meeting of the Board of Directors of the International Association, fully explaining their new educational plan. An exhibition of Chief Scott's talking, educational picture was scheduled for this time but it was impossible for him to be present, so a full explanation of his activity was given instead.

The newly elected officers are,—President S. J. Flores, Shreveport, La.; First Vice-President Geo. B. Goff, Oklahoma City; Second Vice-President, S. Ferguson, Fort Worth, Texas; Secretary, J. E. Taplin, Blackwell, Oklahoma. The State Vice Presidents are as follows,—Arkansas, Chief Tom Morton, Camden; Louisiana, Chief E. L. Dezendorf, Natchitoches; Oklahoma, Chief S. C. Boaz, Henryetta, New Mexico, Chief R. V. Miller, Clovis; Texas, Chief M. P. Burns, Tyler.

Dallas, Texas, will be the host to the 1931 convention. The program arranged was as follows:

Monday, April 14

9 a. m. Registration.
All members, associate members and visitors will register with the Secretary.
11 a. m. Opening session. Music—O. C. F. D. Band. Address of Welcome, Mayor Walter C. Dean, Oklahoma City. Response—President W. J. Springer, Texarkana, Ark.
1:30 p. m. Business session.
Report of Committees:
Fire Department Running Card—Chief Flores, Shreveport, La.; Chief Sarran, San Antonio, Tex.; Chief O'Connor, Beaumont, Tex.
Method of Inspection and Record of Fire Hydrants—H. J. Clark, Chief Engineer Oklahoma Inspection Bureau; Chief Nelson, Guthrie, Okla.; Chief Murphy, Holdenville, Okla.
New Membership—Chief Sarran, San Antonio, Tex.; Chief Hafer; Chief C. O. Pass, Cisco, Tex.; Chief Bogan, Baton Rouge, La.; Chief Miller, Clovis, N. M.
Inspection of Fire Department—Chief Woody, Austin, Tex.; Chief Sarran, San Antonio, Tex.; Chief Hoherd, Temple, Tex.
Public School Safety—Chief Pitts, Tulsa, Okla.; Chief Brun, Ft. Smith, Ark.; Chief Winkleman, Fayetteville, Ark.
7 p. m. Stag supper and smoker.

Tuesday, April 15

9 a. m. Business session.
Music—O. C. F. D. Band.
Report of Committees: Hospitals—Chief Hafer, Little Rock, Ark.; Chief Tate, Hot Springs, Ark.; Chief Tillery, El Dorado, Ark.
Theatres—Construction and Protection—Chief Coffman, Dallas, Tex.; Chief Ferguson, Ft. Worth, Tex.; Chief Meers, Waco, Tex.
Address—Chief Ralph Scott, President I. A. F. C., Los Angeles, Cal.
Report of Committees—Garages—Construction, Protection and Hazards—Chief Mackey, Longview, Tex.; Chief Tinsley, Marshall, Tex.; Chief Burns, Tyler, Tex. Investigation of Fire Extinguishers—Chief Pence, Healdton, Okla.; Chief Jennings, Ardmore, Okla.; Chief Charley Bruns, Gainsville, Texas. Method of Handling Fires—Geo. D. Suter, Little Rock, Ark.; Chief Hafer, Little Rock, Ark.; Chief Brun, Ft. Smith, Ark.
Address—Fred W. Sheppard, Managing Editor, FIRE ENGINEERING, New York.
1:30 p. m. Business session. Scott's pictures.
2:30 p. m. Tour of inspection of Oklahoma City, Oil Fields and other points of interest.
7:30 p. m. Dinner dance.

Wednesday, April 16

9 a. m. Business session. Music—O. C. F. D. Band.
Address—Clarence Goldsmith, Asst. Chief Engineer National Board.
Report of Committees—Organization and Equipment of County Fire Departments—Chief Brown, Ponca City, Okla.; Chief Pence, Healdton, Okla.; Chief Coffman, Dallas, Texas. Advisability of Small Hose—Chief Evans, New Orleans, La.; Chief Bogan, Baton Rouge, La.; Chief Bumgardner, Lake Charles, La. Salvage Work—Chief Taplin, Blackwell, Okla.; Chief Pitts, Tulsa; Chief Goff, Oklahoma City.
Address—Chief John Healey, Denver, Colo.
Report of Committees—Ladder Work and Ventilation—Chief Goff, Oklahoma City; Chief Miller, McAlester, Okla.; Chief Wicker, Shawnee, Okla. Fire Department Records

—Chief Taplin, Blackwell, Okla.; Chief Lyle, Okmulgee, Okla.; Chief Gelbhar, Cushing, Okla.
1:30 p. m. Business session. Reports of Committees. Reports of Officers. New Business. Round Table Discussions. Selection of City for Next Convention. Election of Officers. Installation of Officers. Adjournment.

Ladies Entertainment Program

Monday, April 14
9:00 a. m. Reception and Registration. Convention Headquarters, Skirvin Hotel.
1:30 p. m. Theater party.
7:00 p. m. Dinner bridge.

Tuesday, April 15
2:30 p. m. Sight seeing trip. Stop at Sorosis Club for Tea and Entertainment.
7:30 p. m. Dinner dance.

Wednesday, April 16
10:30 a. m. Shopping tour.

WORK OF NEW YORK DEPARTMENT SUMMARIZED IN ANNUAL REPORT

Insurance Rates in Some Sections Reduced Because of Improvements Made to Fire Alarm System—Interesting Statistical Information

By WM. JEROME DALY

"THE Fire Department has advanced considerably during the year and maintained its high degree of efficiency," wrote Fire Commissioner John J. Dorman to Mayor James J. Walker, in a communication summarizing the report of the activities of the Fire Department for the year 1929 in which he quotes the following extract from the survey made by the National Board of Fire Underwriters last October:—

"The New York Fire Department is powerful, well manned, well equipped, efficient in operation and well organized as a full paid department on a two platoon system under satisfactory supervision and commanded by competent officers appointed and promoted under good civil service regulations; satisfactory retirement and pension provisions with distribution of fire companies good in all important sections; with authorized purchases of satisfactory equipment provided; good manning of companies adequately maintained; water front and shipping well protected by fireboats; fire houses generally in good condition; minor equipment is complete and well standardized; powerful stream appliances sufficient; discipline excellent; good results from drill and training."

The sixteen page summary of the report which has been sent to press deals with the subject of fire prevention, to wit: "Considering the small staff, the Bureau of Fire Prevention has performed a monumental work during the year. It issued 69,856 orders, of which 59,186 were complied with. The bureau has been burdened with inspection and supervision of talking picture studios an entirely new industry."

The letter reveals that there were 40,121 alarms last year, 29,723 fires—"the largest number in the history of the city"—which was 3,774 more than the year 1928 and 10,398 false or unnecessary calls. Of the 29,723 fires, 27,044 were confined to the point of origin, 2,200 were confined to the building in which they originated and only 479 fires extended to adjoining buildings.

Fire losses last year amounted to $16,994,030, an increase of $369,649 over the year 1928. A total of 103,873,733 gallons of water were used in fire extinguishment of which 13,182,352 was salt water pumped by fireboats. Members of the uniformed force made 687,352 inspections of buildings; firemen attached to the Division of Public Assembly which has to do with all premises where large audiences gather, made 2,899 original inspections and 52,196 re-inspections. The Division issued 2,782 orders for compliance in accordance with law and only 100 remained as not complied with at the end of the year.

Four hundred and fourteen persons were injured at fires, an increase of 99 over the year 1928 and 119 persons lost their lives by fire, a decrease of three. There were 7,678 fires in tenement houses, an increase of 567; 3,419 were in dwellings, an increase of 258 and 1,492 were in factories, a decrease of 192. There were 57 arrests for arson an increase of 26, resulting in 29 convictions, an increase of five over the year 1928. Incendiary fires amounted to 125 an increase of 19 and fires regarded as suspicious amounted to 230 a decrease of 19.

During the year seven new engine companies and seven new hook and ladder companies were organized, principally in Queens, Brooklyn and the Bronx; four existing fire companies were re-organized from suburban to cosmopolitan equipped units of fire protection and two volunteer fire companies, in Douglaston and in Little Neck, in Queens County were disbanded and replaced by apparatus and firemen of the paid service. Twelve new fire engine houses were opened, one in Manhattan, three in Brooklyn, two in the Bronx and five in Queens. The department acquired during the year fifty hose wagons, one water tower, four hook and ladder trucks, seven pumping engines, four tractors and twenty-nine cars for chief officers, as well as a gift of two searchlight engines to illuminate the dangerous paths of the firemen when in action.

Two hundred and ninety-nine firemen were appointed on probation, 87 fire companies attended the Company School and 46 junior officers attended the sessions of the Fire College. Ten fire fighters were awarded medals for valor in the line of duty, and scores were cited in lesser degrees for bravery and meritorious conduct.

The sum of $1,170,000 was allowed by the Board of Estimate and Apportionment for sites and buildings for new fire stations in the following localities: Auburndale, Middle Village, South Ozone Park, College Point and Jamaica in Queens; Gerritsen Beach in Brooklyn; Castleton Four Corners, South Beach, Rosebank, New Brighton, Mariners Harbor and Dongan Hills in Staten Island; Bedford Park in the Bronx and a new house on an old site in Old Slip near Hanover Square in Manhattan.

A considerable part of Commissioner Dorman's letter is devoted to the subject of fire alarm telegraph, in which he points out to the Mayor that the Fire Insurance Exchange has allowed reductions of one per cent in rates in the Bath Beach, Bay Ridge sections of Brooklyn and the Williamsbridge and Hunts Point sections of the Bronx, in recognition of the progress made by the department with the installaation of underground fire alarm telegraphs as a substitute for the hazardous aerial wires that served those communities for so many years.

Substantial improvements in the fire alarm telegraph service have been made during the year in the Greenpoint, Flatbush, Williamsburg, Ft. Hamilton, East New York, Canarsie and Coney Island sections of Brooklyn in which 33,300 feet of conduit and 173,394 feet of cable were installed underground. The sum of $59,000 is requested for the year 1930 with which to make certain extensions and improvements in the Empire Boulevard fire alarm central station in Brooklyn; contracts have been awarded for $43,579 with which to make underground installations in the Borough of Queens where 8,042 feet of conduit and 134,034 feet of cable were installed last year and 331 alarm boxes added to the system.

In the Bronx where 672 feet of new conduit and 11,450 feet of cable were installed, principally in the Riverdale section, it is planned to spend $60,000 this year for further enlargements. The Commissioner in his letter asks for funds with which to erect a new fire alarm central station in Staten Island to replace the obsolete operating room in Borough Hall at St. George which was condemned by the Fire Underwriters in their survey.

ORANGE FIRE ALARM BOX LIGHTS FOR WESTCHESTER COUNTY, N. Y.

Chiefs of County in Their Meeting Adopt the Same Light for this Purpose as New York City—Large Attendance at Meeting

THE regular monthly meeting of the Westchester County Fire Chiefs' Emergency Plan was held at the Fire Headquarters, Larchmont, N. Y., on April 16, there being a large attendance of chiefs and other fire department officials present. Chief George S. Towle, Larchmont, the President, presided, and called on Secretary-Treasurer Eugene Riviere for his report. The latter announced that there was a balance of $74 in the treasury. Chief Abbott Griffen, of White Plains, called attention to the orange light globe on exhibition in the meeting hall, saying it was the identical type of light adopted by New York City for its fire alarm signal boxes. He moved that the globe be adopted by the Plan as the standard for the county and that the committee be discharged, having accomplished its purpose. This was carried.

Chief Griffen said that in adopting the light White Plains had to sign a new contract with the Westchester Lighting Company, but without extra compensation. The committee received a vote of thanks for its labor in connection with the adoption of the light.

Chief H. E. McTavey, Mt. Kisco, spoke of the program of the Organization Committee, and urged all members to work to increase the membership of the Plan. Chief D. W. Travers, Peekskill, reported progress for the Zoning Committee.

The chair appointed as a Nominating Committee to choose candidates for election as officers for the ensuing year, Chiefs Mulcahey, Brennan and Griffen and Ex-Chief Lemon. This committee retired to consider the choice of officers.

The Secretary read a letter from Stanley & Patterson requesting membership in Plan, if according to constitution. Robert H. Lockwood, Editor of FIRE ENGINEERING, suggested that there should be an Associate Membership, so that manufacturers and others could become members of the Plan. Chief Mulcahey thought an associate membership a very essential matter. The matter was referred to the Membership Committee. A vote of thanks was tendered to FIRE ENGINEERING in the person of the Editor, for the space given to the meetings and for co-operation.

The Nominating Committee reported as its ticket, to be voted upon at the May meeting, the following:

President, Chief H. E. McTavey, Mt. Kiscoe; First Vice-President, Chief D. Wiley Travers, Peekskill; Second Vice-President, Chief Conway, East Portchester; Third Vice-President, Chief Arthur Steuhl, Eastchester; Executive Committee, Chief James Sullivan, Greenwich, Conn.; Chief Lounsbury, Portchester; Chief John Gibson, Mt. Vernon, and Chief James J. Mulcahey, Yonkers.

Chief Mulcahey suggested the idea of holding a dinner meeting next month, so as to get better acquainted Chief Gibson also spoke in favor of a dinner meeting, and made a motion in favor of holding the dinner. This was carried.

At the conclusion of the meeting a repast was served by the Fire Department of Larchmont, and the members were entertained by Messrs. Collins of Eastchester and Weeman of Larchmont.

A feature of the meeting was a demonstration by Mr. Leerberger, of Walter Kidde & Co., New York City, of the Lux Fire Extinguishing system and the Fyre-Freez Extinguisher, a system using carbon dioxide gas.

Special Train for New England Chiefs

A special train has been chartered to take the New England Association of Fire Chiefs to Winnipeg, Manitoba, Canada, in time for the convention of the International Association of Fire Chiefs. The trip has been arranged by George F. Cobb, traffic manager, in connection with the Boston & Albany Railroad. Any one planning to join this party is urged to communicate with Mr. Cobb, 774 Albany St., Boston, Mass.

The trip will be made by railroad and boat on the way to Winnipeg, and returning will be made by train with a stopover at Niagara Falls.

Friday, September 5

(Standard Time)
Leave Boston 3.40 p. m. via Boston & Albany R. R.
Worcester 4.55 p. m.
Springfield 6.17 p. m.
Pittsfield 7.57 p. m.
Arrive Albany 9.15 p. m.
Table d'Hote Dinner in Dining Car.
Leave Albany 9.46 p. m. via New York Central R. R.

Saturday, September 6

Arrive Toronto 7.45 a. m. via Canadian Pacific Ry.
Table d'Hote Breakfast at Royal York Hotel.
Leave Toronto 10.30 a. m. via Canadian National Ry.
Arrive Sarnia 4.10 p. m.
Table d'Hote Luncheon in Dining Car.

Beyond Toronto, appropriately called the "Queen City" and sometimes the "City of Homes," the route lies through the beautiful Dundas Valley, passing the city of Brantford, Ontario, where Alexander Graham Bell first experimented with the telephone—the valley of the Grand River, Woodstock, and the city of London, thence to the port of Sarnia on Lake Huron to embark on the palatial steamer "Noronic" of the Northern Navigation Company.

Leave Sarnia 4.30 p. m. via Northern Navigation Company.

Berth and meals included on Steamer. On Lake Huron during the evening and night, entering the lovely St. Mary's River early the next morning and arriving at Sault Ste. Marie during the forenoon and passing through the famous "Soo" canal through which in eight months pass more vessels than through either the Panama or Suez canals during the course of an entire year. Continuing, the steamer enters the vast waters of Lake Superior—the world's greatest lake.

Monday, September 8

Arrive Port Arthur 6.45 a. m. A city famous as the gateway to the Canadian Golden West and from whose gigantic elevators over 300,000,000 bushels of grain are shipped East each year. Here appears gigantic Thunder Cape, rising 1,370 feet above the water, the "Sleeping Giant," and known in legend as the body of Hiawatha turned to stone.

Leave Port Arthur 7.00 a. m. via Canadian Pacific Ry. Arrive Winnipeg 6.30 p. m. Table d'Hote meals in dining car en route. Between Port Arthur and Winnipeg the journey lies through a heavily wooded region dotted with countless lakes to Kenora, Ontario, beyond which lie vast reaches of prairie.

September 9, 10, 11 and 12 in Winnipeg

Headquarters at the Hotel Royal Alexandra.

Friday, September 12

Leave Winnipeg 5.40 p. m. via Canadian Pacific Ry.

Saturday, September 13

On the train across the Province of Ontario through the majestic North Woods and among the lakes and rivers of Northern Ontario.

Table d'Hote Meals in Dining Car En Route.

Sunday, September 14

Arrive Toronto 7.20 a. m. Table d'Hote Breakfast in Union Station, Toronto. Leave Toronto 9.30 a. m. via Canadian Pacific Ry. Arrive Niagara Falls 1.25 p. m. via New York Central R. R. Headquarters at the Hotel Niagara. Table d'Hote Luncheon.

The afternoon at Niagra Falls and vicinity with an opportunity to visit the Falls and all points of interest including the Great Gorge trip which is a twenty-mile ride on both the Canadian and American sides of the Niagara River.

Table d'Hote Dinner at the Hotel Niagara.

Leave Niagara Falls 8.25 p. m. via New York Central R. R.

The end of the journey—again across the Mohawk Valley with a daylight ride through the Berkshire Hills.

Monday, September 15

(Standard Time)
Arrive Pittsfield 6.00 a. m. via Boston & Albany R. R.
Springfield 7.38 a. m.
Worcester 9.05 a. m.
Boston 10.15 a. m.
Table d'hote breakfast in dining car en route.

Expense of Transportation

For the meeting in Winnipeg arrangements have been made for reduced fares on the "Identification Certificate Plan." To secure the reduced fare members must present to the ticket agnt a certificate which will be issued by the International Association of Fire Chiefs, and which certificate will be sent to the members of the New England Association. If the certificate is not received within a reasonable time communicate with the Secretary or with Mr. George F. Cobb, Traffic Manager, 774 Albany St., Boston, Mass. The round-trip ticket should be purchased at the home station so as to secure the reduced rate for the entire journey.

When purchasing the round-trip tickets to Winnipeg be sure that they are routed via Boston & Albany R. R. to Albany—New York Central R. R. to Buffalo—Michigan Central R. R. to Welland—Toronto, Hamilton & Buffalo R. R. to Hamilton—and Canadian Pacific Ry. to Winnipeg via Toronto; returning via the same route.

Fares

From	Round Trip
Boston	$94.19
Worcester	91.79
Springfield	88.88
Westfield	88.35
Pittsfield	86.04
Albany	83.34
Concord via Boston	98.15
Portland via Boston	100.07
Rutland via Albany	88.37
Burlington via Albany	92.06

Berths, Staterooms, Meals, Etc., Additional

Lower berth on train and outside stateroom on steamer. All meals and fees including Niagara Falls stop-over—except fees on steamer..... $65.00
Upper berth on train and inside stateroom on steamer. All meals and fees including Niagara Falls stop-over—except fees on steamer..... $55.00

Hotel Accommodations at Winnipeg

Room with Bath (2 in Room) $4.00 per person.
Room with Bath (3 in Room) $3.00 per person.
Room with Bath (4 in Room) $2.50 per person.

N. F. P. A. to Meet in Atlantic City

The thirty-fourth annual meeting of the National Fire Protection Association will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., May 12-15. Many committees will present their reports. Following is the order of proceedings:

Monday Afternoon, May 12

Public Information, Franklin H. Wentworth, Chairman.
Membership Committee, Charles E. Meek, Chairman.
New York City Committee Report, Albert W. Pell, Chairman and P. E. Brown, Secretary.
Fire Prevention and Clean--Up Campaign, T. Alfred Fleming, Chairman.

Tuesday, May 13

Report From U. S. Joint Fire Prevention Committee, Frank C. Jordan, Chairman, Jay W. Stevens, Vice-Chairman, and Franklin H. Wentworth, Secretary.
Report From Canadian Joint Fire Prevention Committee, W. H. Alderson, Chairman, and George F. Lewis, Secretary.
The N. F. P. A. Field Service, Percy Bugbee, Assistant Managing Director.
Fire Record Committee Report, Robert S. Moulton, Chairman, and Harold S. Walker, Secretary.
Report from N. F. P. A. Representative to American Standards Association,—A. R. Small.
Marine Committee Report, Samuel D. McComb, Chairman, and A. J. Smith, Secretary.
Aviation Committee Report, Samuel D. McComb, Chairman, and Alvin W. Smith, Secretary.
Open Meeting of Chamber of Commerce and Safety Council Section, George W. Elliott, Chairman.

(*Continued on page* 378)

CONVENTION DATES

May 12, week of—NATIONAL FIRE PROTECTION ASSOCIATION. 34th Annual Meeting, Atlantic City, N. J. 1931 Convention probably to be held in Toronto, Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 14—DEL-MAR-VA. VOLUNTEER FIREMEN'S ASSOCIATION. 1st Annual Convention, Cambridge, Md. Secretary, J. Emory Parks, Cambridge, Md.

May 19-23—KANSAS STATE ASSOCIATION OF FIRE CHIEFS, STATE FIREMEN'S ASSOCIATION and FIRE SCHOOL. Respectively, 14th and 43d Annual Convention and 2nd Annual Fire School, Salina, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan. Secretary, Firemen's Short Course Committee, E. J. Stewart, Kansas Insp. Bureau, 701 Jackson St., Topeka, Kan.

June—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 41st Annual Convention, Rensselaer, N. Y. (Date to be set later.) Secretary, Pierce D. Kane, Averill Park, N. Y.

June 2-4—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 36th Annual Convention, Tulsa, Okla. Secretary-Treasurer, Charles Slemp, 820 East 19th St., Oklahoma City, Okla.

June 2-6—AMERICAN WATER WORKS ASSOCIATION. 50th Annual Convention, Hotel Jefferson, St. Louis, Mo. Secretary, Beekman C. Little, Rochester, N. Y. Offices of the Association, 29 West 39th Street, New York City.

June 4-6—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 8th Annual Convention (Combined with Firemen's Short Course), Deming, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

June 7—LANCASTER COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Elizabeth, Pa. Secretary, J. Harry Grube, Landisville, Pa.

June 9-10—EASTERN ASSOCIATION OF FIRE CHIEFS. 3rd Annual Convention, Lord Baltimore Hotel, Baltimore, Md. Address, A. Shepherd Bayly, Secretary, the Maryland State Firemen's Association, Cambridge, Md.

June 9-11—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 25th Annual Convention, Beaufort, S. C. Secretary, R. S. Hood, Sumter, S. C.

June 9-11—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. 24th Annual Convention, Utica, N. Y. Secretary-Treasurer, Chief J. H. Golden, Fire Department, Cohoes, N. Y.

June 10-11—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 58th Annual Convention, Excelsior, Minn. Secretary, Chief Fred Pfaender, New Ulm, Minn.

June 10-12—OHIO FIRE CHIEF'S ASSOCIATION. 13th Annual Convention, Portsmouth, Ohio. Secretary, Chief Philip J. Hardy, Fire Department, Youngstown Sheet and Tube Company.

June 10-12—SOUTHERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 35th Annual Convention, Long Beach, L. I. Secretary, Theodore W. Nass, Lindenhurst, L. I., N. Y.

June 11-13—MARYLAND STATE FIREMEN'S ASSOCIATION. 38th Annual Convention, Lord Baltimore Hotel, Baltimore, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 11-13—WISCONSIN STATE FIREMEN'S ASSOCIATION (Volunteer). 43rd Annual Convention, Plymouth, Wis. Secretary, E. Philip Mueller, Jefferson, Wis.

June 13-14—DELAWARE COUNTY FIREMEN'S ASSOCIATION. 24th Annual Convention and Parade, Linwood, Pa. Financial Secretary, William E. Wunderlich, Lansdowne, Pa.

June 13-14—DAUPHIN COUNTY FIREMEN'S ASSOCIATION. 12th Annual Convention, Steelton, Pa.

June 16-20—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Danville, Pa.

June 17-20—SHORT COURSE ON FIRE PREVENTION, CONTROL AND EXTINGUISHMENT. 6th Short Course, University of Illinois, Champaign-Urbana, Ill. Address, Prof. C. C. Palmer, Director of Course, Architectural Bldg., at the University.

June 20-21—FOUR COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Easton, Pa.

June 24-25—WISCONSIN SHORT COURSE IN FIREMANSHIP. 2nd Short Course at the State University, Madison. Address, Prof. H. E. Pulver, at the University.

June 24-27—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 8th Annual Convention, Hotel Berwick, Rutland, Vt. Meetings, Odd Fellows' Hall; Exhibits, Armory, Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.; Chairman, Exhibits, Chief Daniel B. Tierney, Arlington, Mass.; Traffic Manager, George F. Cobb, Boston.

July 3-5—COLORADO STATE FIREMEN ASSOCIATION. 14th Annual Convention and Tournament, Salida, Col. Secretary, Clinton Turnbull, 303 Jacobson Bldg., Denver, Col.

July 8-11—MICHIGAN STATE FIREMEN'S ASSOCIATION. 56th Annual Convention and Fire College, South Haven, Mich. Secretary-Treasurer, H. L. Williams, Ludington, Mich.

July 9-10—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION 10th Annual Convention, Georgetown, Sussex County, Del. Secretary, Sam H. Carson, Dover, Del.

July 14-15—MONTANA STATE FIREMEN'S ASSOCIATION. 39th Annual Convention, Missoula, Mont. Secretary-Treasurer, D. E. Moser, Bozeman, Mont.

July 22-23—WESTERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 30th Annual Convention, Rochester, N. Y. Secretary, Henry A. Clark, Batavia, N. Y.

July 29-31—INDIANA FIREMEN'S ASSOCIATION. 13th Annual Convention, Lafayette, Ind. Secretary, Clem Smith, Fire Headquarters, Terre Haute, Ind.

July 30-31—CENTRAL NEW YORK FIREMEN'S ASSOCIATION. 37th Annual Convention, Skaneateles, N. Y. President, C. W. McCray, Waverly, N. Y.; Secretary, T. J. Murray, Cortland, N. Y.

July 31-Aug. 1-2—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, San Francisco, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

August—MAINE STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, Bangor, Me. (Date to be set later.) Secretary, Earl E. Pratt, Auburn, Me.

August—UTAH STATE FIREMEN'S ASSOCIATION. 23rd Annual Convention, Provo City, Utah. (Exact date to be decided later.) Secretary, Charles A. Canning, Midvale, Utah.

Aug. 6-8—WASHINGTON STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Kelso, Wash. Secretary, H. S. Jenkins, Bellingham, Wash.

Aug. 12-14—WISCONSIN PAID FIREMEN'S ASSOCIATION. 23rd Annual Convention, Two Rivers, Wis. Secretary-Treasurer, William H. Schultz, Sheboygan, Wis.

Aug. 12-15—WYOMING STATE FIREMEN'S ASSOCIATION. 4th Annual Convention and Tournament, Caspar, Wyo. Secretary, Chief Justin H. Patrick, Laramie, Wyo.

Aug. 19-22—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 58th Annual Convention, Nyack, N. C. Secretary, Fred A. Davis, Drawer X, Fort Edward, N. Y.

Aug. 27-29—VIRGINIA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Phoebus, Va. Secretary, E. K. Landis, Pulaski, Va.

Sept. 1-4—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 37th Annual Convention, Oakland, Cal. Secretary, Jay W. Stevens, 1014 Merchants' Exchange Building, San Francisco, Cal.

Sept. 2-4—KENTUCKY FIREMEN'S ASSOCIATION. 11th Annual Convention, Paducah, Ky. Secretary, Capt. S. G. Render, 940 Starks Bldg., Louisville, Ky.

Sept. 2-5—DOMINION ASSOCIATION OF FIRE CHIEFS. 22nd Annual Convention, Port Arthur, Ont. Secretary, Chief James Armstrong, Kingston, Ontario, Can. Exhibit Space, Chief A. S. Kapelle, Stratford, Ont.

Sept. 9-11—ILLINOIS FIREMEN'S ASSOCIATION. 43rd Annual Convention, Peoria, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill. Exhibits, Chief Albert Herring, Fire Department, Murphysboro, Ill.

Sept. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 58th Annual Convention, Hotel Royal Alexandra, Winnipeg, Man., Canada. Recording Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Charles Alt, Fire Headquarters, St. Louis, Mo. Hotel Reservations, Chief D. A. Boulden, Winnipeg, Man.

Sept. 16-17—IOWA FIREMEN'S ASSOCIATION. 53rd Annual Convention, Boone, Ia. Secretary, Paul Soener, Independence, Ia.

Sept. 24-25—MISSOURI STATE FIREMEN'S ASSOCIATION. Annual Convention, Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis.

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 51st Annual Convention, Hotel Americus, Allentown, Pa. Secretary, Charles E. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 8-9—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Sheboygan, Wis. Secretary, Chief Arthur J. Rahn, Fire Department, Two Rivers, Mich.

Oct. 21-23—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention (2d in year), Scottsbluff, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Gamewell Adds to Sales Force

Two additional men have been added to the New York sales organization of the Gamewell Company as sales engineers.

Mr. Burns has been actively associated for several years with the automobile field. He was with the General Motors Corporation and the Graham-Paige Corporation. He left the latter company to go with the Gamewell organization. Mr. Burns

Thomas R. Burns

G. O. Bedard

has travelled extensively throughout the country while in sales promotion work.

He received his education at the University of Pennsylvania.

Mr. Bedard has been with the Gamewell Company for a period of two years, engaged in the construction end. He is a graduate of Worcester Polytechnic Institute, where he received a degree of Electrical Engineer.

Technicality Holds Up Pay Increase—Publication of a wrong number has held up the city ordinance of Sioux City, Ia., for an increase in pay for members of the Fire Department. The amended ordinance lists the pay of Assistant Chiefs at $225 a month, captains at $180, and lieutenants at $170.

FIRE DEPARTMENT ACTIVITIES

Baldwin Park, Cal., to Erect Fire House—A new fire station will be erected in Baldwin Park, Cal.

Frederic, Wis., May Buy Apparatus—Frederic, Wis., is considering the purchase of fire apparatus.

Pumper Delivered to Ft. Dodge, Ia.—A pumper costing $8,750 has been delivered to Fort Dodge, Ia.

Haddonfield, N. J., to Have New House—A modern fire station will be erected in Haddonfield, N. J.

New Fire Alarm for Shelbyville, Ky.—A Gamewell fire alarm system will be installed in Shelbyville, Ky.

Freehold, N. J., Has New Pumper—A new Mack pumper has been placed in service in Freehold, N. J.

Liberty, Tex., Receives New Apparatus—New fire apparatus costing $6,500 has been delivered to Liberty, Tex.

London, O., May Buy Pumper—London, Ohio, is considering the purchase of a 1,000-gallon pumper.

Revere, Mass., Has New Pumper—Revere, Mass., has purchased a 600-gallon Mack pumper.

Madison, N. J., to Order Apparatus—Madison, N. J., has invited bids for a ladder truck to cost under $10,000.

Hopewell, Va., Erecting Station—A new fire station, costing $30,000, is being erected in Hopewell, Va.

San Anselmo, Cal., Expecting Pumper—San Anselmo, Cal., is expecting delivery of a 600-gallon pumper.

Hazel Green, Ill., Buys Apparatus—Hazel Green, Ill., and farmers from adjoining communities have purchased fire apparatus for $3,950.

Seattle to Award Station Contract—Bids were opened in Seattle, Wash., for the construction of a fire station estimated to cost $60,000.

New Fire Houses for Philadelphia—An ordinance for $200,000 has been approved for the construction of two new fire stations in Philadelphia, Pa.

Plans Made for Mansfield Station—Plans have been drawn by George E. Robinson for a fire station for Mansfield, Mass., to cost $40,000.

Rochester, Minn., to Erect Fire Station—Bids have been invited for the construction of a fire station in Rochester, Minn., estimated to cost $50,000.

Wichita, Kans., to Have New House—A new fire house will be erected in Wichita, Kans., at a cost of $75,000. It will be constructed of dark colored brick, trimmed with Bedford stone, and will be two stories high.

Tucson, Ariz., to Install Fire Alarm—Tucson, Ariz., has awarded a contract to the Gamewell Company for the installation of a fire alarm system. Bids will be invited soon for the construction of a fire station in Menlo Park.

Pumper Delivered to Bayshore, N. Y.—A 1,000-gallon pumper has been delivered to Bay Shore, N. Y. The department consist of 120 men divided into six companies. It has nine pieces of apparatus.

South Bend, Ind., Orders Apparatus—South Bend, Ind., has ordered two pieces of apparatus mounted on Studebaker chassis. One will be a ladder truck and the other a triple combination pumper.

Tacoma Fireman Thrown from Apparatus—A member of Engine No. 6, Tacoma, Wash., was thrown from the apparatus when the machine skidded while on its way to a fire.

Firemen Cannot Be Retired Because of Age—According to ruling of the Attorney-General at Columbus, Ohio, trustees of a firemen's pension fund have no authority to retire a department member at a given age.

San Antonio to Open Stations in June—San Antonio, Tex., will open two fire stations by June 1. If a contemplated $4,975,000 bond issue passes May 7, four more fire stations will be located in the suburbs.

Boston Boat to Cost $350,000—The new fire boat for Boston, Mass., will cost $350,000. It will be designed and constructed under the supervision of Fay, Spofford & Thorndike. The boat will be ready in a year.

Mt. Vernon Improving Fire Alarm System—A new central fire alarm office is being installed on the third floor of the city hall in Mt. Vernon, N. Y. The system will be changed from automatic to semi-automatic and manually operated. Operators will be on duty at all times.

No Authority for Rural Departments—According to an opinion of the Attorney General's office, there is no statutory authority in Oklahoma for organizing rural fire departments and purchasing fire-fighting equipment with county funds, for farm fire protection.

Children Escape From Theatre Fire—Three hundred children escaped injury when fire broke in a theatre in Woburn, Mass. The blaze started behind the screen and was reported to have been spread by inflammable wall linings used to deaden echoes for sound movies.

Portland Pension Declared Mulcted—Chief Grenfell of Portland, Ore., stated that the firemen's pension fund is being mulcted. It was charged that applicants for the department had faked as much as ten years in their age. In the future, applicants will be asked to show birth certificates or army or navy records to certify the age given.

Pay Increase Asked for N. Y. Pilots—Commissioner John J. Dorman of the New York Fire Department asked for pay increases for forty licensed pilots and marine engineers of the ten fireboats. Pilots now receive $3,000, the same as first grade firemen, but in addition they have the responsibilities of a navigating officer.

N. F. P. A. to Meet in Atlantic City

(*Continued from page 376*)

The Boston Fire Waste Survey, by Dr. Miller McClintock, Director, Albert Russel Erskine Bureau, Harvard University.
Erie's Fire Prevention Program, by Dana Jones, Secretary, Manufacturers Association of Erie, Pa.
Fire Department Publicity by J. N. Sullivan, Chief of Fire Department, Utica, N. Y.

Wednesday, May 14

Automatic Sprinklers Report, E. P. Boone, Chairman, and Arnold Grasse, Secretary.
Tanks, C. D. Abbott, Chairman, and H. A. Sweet, Secretary.
Thermostats Report, R. W. Hendricks, Chairman.
Thermostatic Systems, address by R. W. Hendricks.
Private Fire Supplies from Public Mains, Henry E. Halpin, Chairman.
Field Experience With Large Calcium Chloride Sprinkler Systems, address by C. L. Scofield.
Hydrants, Valves and Pipe Fittings Report, C. W. Mowry, Chairman.
Field Practice Report, Frank R. Daniel, Chairman.
Small Hose Couplings Report, R. W. Hendricks, Chairman.
Electrical Committee Report, A. R. Small, Chairman, and V. H. Tousley, Secretary.
Electrical Field Service, A. R. Small, Chairman.
Electric Railway Car Houses and Cars, Louis Harding, Chairman.
Signaling Systems Report, C. W. Pierce, Chairman, and A. C. Hutson, Secretary.
Protection Against Lightning, Morton G. Lloyd, Chairman.
Piers and Wharves Report, Charles H. Fischer, Chairman.
Farm Fire Protection, David J. Price, Chairman, and H. E. Roethe, Secretary.
Spontaneous Heating and Ignition Report, H. H. Brown, Chairman, and H. E. Roethe, Secretary.
Dust Explosion Hazards, David J. Price, Chairman, and Hylton R. Brown, Secretary.
Fire Fighting Equipment in Metal Mines, Wm. Conibear, Chairman.

Wednesday Evening, May 14

Salvaging Operations, Frank C. McAuliffe, Chairman.
Forest Protection, address by H. B. Shepard, Senior Forest Economist, U. S. Department of Agriculture.
Visual Education Report, Richard E. Vernor, Chairman.

Thursday, May 15

Garages Report, H. E. Newell, Chairman.
Blower Systems, Robert Palm, Chairman, and J. L. King, Secretary.
Manufacturing Risks and Special Hazards, W. D. Milne, Chairman.
Construction Operations Report, Wm. R. White, Chairman.
The Safe Use of Portable Cutting and Welding Equipment, address by C. W. Mowry, Associated Factory Mutual Fire Insurance Companies.
Meeting of Fire Marshals Section.
Zoning Report, Rudolph P. Miller, Chairman.
Building Construction, Wallace Wales, Chairman, and F. H. Alcott, Secretary.
Safety to Life Report, John Irwin Bright, Chairman, and Robert S. Moulton, Secretary.
Hazardous Chemicals and Explosives, A. H. Nuckolls, Chairman.
Flammable Liquids Report, H. L. Miner, Chairman, and H. E. Newell, Secretary.
Protection of Openings in Walls and Partitions, J. A. Neale, Chairman.
Storage of Combustible Fibres, R. P. Strong, Chairman.
Report on Gases, H. E. Newell, Chairman.
Protection of Records, H. P. Weaver, Chairman.

PROPOSED IMPROVEMENTS

Millbrook, Dutchess Co., N. Y.—committee investigating purchase of new fire apparatus to replace present truck now in use. Estimated cost, $12,500.

Dayton, Montgomery Co., Ohio.—Plans are being considered for erection of another fire setation for the protection of the newly-annexed Mt. Auburn and Fairview districts. Estimated cost, $125,000.

Tiffin, Sussex Co., Ohio.—City Council voted to issue $15,750 bonds for purchase of new triple combination pumper and chief's car, according to reports.

For Sale

1-8 Circuit combination Fire and Police signal Switchboard.
1-4 Circuit Telephone and Police Signal desk.
1-8 Circuit Battery Rack
Approximately 45 Gamewell Fire Alarm boxes. 15 Police Signal Boxes.
200 Battery Jars and Covers
All the above equipment just cut out of service and can be purchased at a mere trifle of its original cost. Write or telegraph.

Hobart Bradstreet,
Dir. of Public Safety,
Steubenville, Ohio

4-30

Wanted
Fire Apparatus Salesman

Fire apparatus salesman wanted to cover Eastern New York State selling Prospect Fire Engines and several lines of Fire Equipment. Address Box 255, FIRE ENGINEERING, 24 West 40th St., New York City.
4-16

Wanted
Fire Alarm Engineer

Fire Alarm Engineer—Capable of designing Municipal and Industrial Fire Alarm equipment in the laying out of circuits. Man must have complete knowledge of Fire Alarm Control Apparatus and be capable of taking complete charge of the Engineering Department. None other than first class man will be considered. Address: Box 265, c/o FIRE ENGINEERING, 24 West 40th St., New York City.
4-30

Tandy Appointed Sales Engineer

D. F. Tandy has been appointed sales engineer of the Gamewell Company and will operate out of Syracuse, N. Y.

He has been engaged in municipal fire alarm work at the old Harrington-Seaberg Corporation plant, and has traveled New York state quite extensively. Prior to that time, he was occupied in contracting work and handled municipal supplies.

Mr. Tandy has completed a factory training course at Newton, Mass.

D. F. Tandy

Many Homeless After Big Fire

Twenty persons lost their lives when fire destroyed a large sawmill in Cadiz, Philippine Islands, and made more than five thousands homeless. The damage has been estimated at $2,500,000.

Flames spread with great rapidity from the sawmill to the adjacent filmsy houses of the natives. The Filipinos gathered what little personal possessions they could save and camped on the outskirts of Cadiz awaiting aid.

The sawmill was the property of the Insular Lumber Company, one of the largest in the Philippines.

Pembroke, N. H., to Have New Station—Pembroke, N. H., voted to erect a $20,000 fire station.

Cos Cob, Conn., Opens Fire Station—The new $65,000 fire station in Cos Cob, Conn., has been completed. A diaphone fire alarm may be installed.

Reading Fire Alarm Completed—The new fire alarm system of Reading, Pa., has been completed. It consists of 160 boxes. The central office is located in the city hall.

Kirkland, Wash., to Have Semi-Paid Force—If the recommendations of a special committee are followed, Kirkland, Wash., will have a semi-paid fire department.

Lynden, Wash., Starts Fire Department—A rural fire district has been organized for the protection of the townships of Lynden, Ten Mile and Delta, Wash. Fire apparatus has been purchased.

Altoona Asked to Give More Protection—Officials of Altoona, Pa., were asked to give better fire protection to the recently annexed territory. The city believes that it may be well to completely reorganize the fire system.

J. H. Green Now Eureka President

At the regular annual meeting of the Board of Directors of the Eureka Fire Hose Mfg. Co. on April 1st, Joseph H. Green was elected President of the company to succeed B. L. Stowe who has retired.

Mr. Green, an outstanding leader in the fire hose industry and widely known in fire circles throughout the country, has been with the Eureka organization for the past twenty-five years. Starting in 1905, he was elected successively as Assistant Secretary in 1917 and Vice-President in 1925, from which office he was elevated to the Presidency.

Joseph H. Green

Joe, as Mr. Green is familiarly called by his many friends in the fire service, has conducted his business affairs in a way that has won for him the reputation of being a "square shooter." What he has always been known for particularly is his strict adherence to the principle that fire hose, on which practically all fire-fighting work depends, should be manufactured and sold on the basis of quality rather than price.

Mr. Green will continue to make his headquarters at the main office of the company, 50 Church Street, New York.

Fire Chiefs Meet in Worcester

There was an attendance of 118 members and guests at the April luncheon and meeting of the Fire Chiefs' Club of Massachusetts in the Hotel Warren at Worcester, Mass., where the chiefs went upon invitation of Chief Charles L. McCarthy, of the Worcester Fire Department.

Greetings of the city were extended by Mayor O'Hara, Chief McCarthy, and Police Chief Foley. Chief Daniel F. Sennott, of Boston, replied in behalf of the club.

The principal speaker was Otis C. White, President of the Box 4 Associates of Worcester.

Fire Commissioner Edward F. McLaughlin, of Boston, was elected to membership in the club.

The chiefs visited fire headquarters and were taken on a trip to the fire alarm telegraph bureau and on a tour of the city.

Chief Selden R. Allen, of Brookline, President of the club, was in charge of the arrangements, assisted by the Secretary, Ex-Chief F. Burt Jaquith, of Randolph, Mass.

HARRY BELKNAP.

Eastchester Entertains Fire Officers

Chief Arthur Steuhl, of the Eastchester Township, N. Y., Fire Department, was host on April 10 to the Officers' Club of the department, on which occasion Chief James J. Mulcahey, of the Yonkers, N. Y., Fire Department Secretary of the International Association of Fire Chiefs, was the guest of honor and the principal speaker. Others who addressed the club were Dr. John F. Weston, Department Surgeon; Fire Commissioners Comstock, and Stewart, Clerk Eibell, First Deputy Chief John F. May and Second Deputy Chief R. J. White. Fire officials from Yonkers and Mt. Vernon were also present.

Newtown, Pa., to Buy Pumper—Newtown, Pa., voted to buy a Hahn pumper.

McCausland, Ia., to Buy Apparatus—Plans have been made for the purchase of fire apparatus in McCausland, Ia. Funds are being raised.

Delphos, O., Buys Another Pumper—Delphos has purchased another pumper for $13,000. Community apparatus was purchased several months ago.

Schenectady House Nearly Finished—The new two-story fire station erected in Schenectady, N. Y., will be ready for occupancy May 1.

FALSE ALARMS

ENTIRELY STRANGE

Life had been most unkind to him. He was fifth on the list for lieutenant and before his name was reached, the list had expired. He tried again with no better luck.

When a probationary fireman was assigned to his company he gave the new one the following advice:

"Take my advice. Get out of this racket. Take a fire extinguisher and start walking. When you reach a place where they ask you what it is that you are carrying, that's the place, son, for you to settle down."

From an advertisement in a fire chief's association program:

"Welcome chiefs. We always welcome the firemen to our store."

MOTIONLESS

There were many laborers out of work due to business depression. So in order to favor as many as possible, each time the fire hall had to be cleaned, a different person was given the job.

However, after one had enjoyed a day's work he had spunk enough to ask for more.

"Could I be your steady cleaner?"

"My good man if you were any steadier you'd be motionless."

In Boston you're not allowed to read a book under a tree if its shady.

KNEW HIS LAW

Coming home from the lodge initiation, this member found the way exceedingly tiresome and beset with obstacles. His feet became wobbly. He needed a rest and sat down on the curb stone.

Along came an officer.

"Get up and move, on there."

"I'll not move on, offisher. I ish at leasht ten feet from that hydrant.

A lung specialist says that a man who sings at the top of his voice for an hour a day won't be troubled by chest complaints in his old age. He probably won't even be troubled by old age.

HE QUALIFIED

The town was very much worked up over their lack of fire protection. For the second time within a period of four months the community was visited by a rather serious fire. A public meeting had been called and it was very well attended. But while the subject was quite a live one, the speakers were not so.

After the last talk on the program the speaker announced that there would be a meeting of the Board following the meeting. When the audience had gone and the five members of the board were about to go into session, it was noticed that a stranger had stayed and showed no signs of being ready to leave.

A few moments of embarrassed silence ensued, after which the chairman addressed the stranger awkwardly and said:

"Possibly you didn't understand this was to be just a meeting of the board."

"Yes, indeed," replied the other genially. "Go ahead; no one was more so this evening than I."

An old-fashioned beau
In an old-fashioned car
With an old-fashioned girl
Cannot get very far.

TOO GENEROUS

The handy man applied at the repair shop for a job. After the usual preliminary details, the master mechanic decided to place the newcomer on the payroll.

"I suppose you'll pay me what I am worth," remarked the applicant.

The master mechanic replied, "Yeh. I might even give you a small salary to start with."

"His father kept a saloon."

"Is his family as old as that."

WRONG THEORY

The policeman recognized the car. He had had its owner in court before for parking near a hydrant.

"I thought I told you not to park near a hydrant. Why do you do it?"

"Because of my belief, sir."

"Funny! Whataya mean?"

"I believed that this was your day off."

Our advice to girls is: If you want to be a big shot, use plenty of powder.

A FAST ONE

Two rival apparatus drivers were swapping stories, but it was evident that the incidents were very far from the truth.

"One remarked, "In going to a fire I drive so fast that the trees appear like a fence."

The other was not at all alarmed.

"That's all very well, but out in the country when I go to a fire, the milestones appear to make a stone wall."

And some of the straws at these soda-fountains also go by the old motto: "Never give a sucker an even break."

VERY VALUABLE

The owner of the house who had escaped from the flames, turned and dashed again into the burning premises. After what seemed to the onlookers to be an age, he reappeared carrying a large bundle in his arms, and removed himself to a safe distance, with his precious burden.

"What is it?" asked a sympathetic onlooker.

"It's our new fire extinguisher, replied the owner of the house. "I wouldn't like to have lost it."

CASE DISMISSED

Gibbins was a song writer who found the profession of fire-fighting much more exciting and a surer way of earning a living. A local theatre advertised for new songs, the works to be tried out in the presence of the manager and musical director.

Gibbins composed a song and presented himself at the theatre. The song was commonplace without a catchy tune. The musical director put his hands to his ears as the songster shreiked it.

"What do I get for that?" he asked when he had finished.

"I'm a musical director, not a magistrate," was the reply.

USUAL WAY

Fire prevention had been carried to such extremes in the chief's home that even his wife became conscious of it. She adopted it as a topic for an address to her woman's club. The chief was telling his friend about it.

"And I suppose that she is working on the address now."

The chief replied with a peculiar twinkle in his eye:

"No, the dress."

COOPERATION

The instructor was examining the blackboard work at the fire school. He was amazed at the solution of the assigned problem.

"Is this your work, Smith? I don't see how it's possible for a single person to make so many mistakes."

Smith arose proudly:

"It isn't a single person, sir. Others have helped me."

TRUE TO WORD

The captain was very much displeased with what he found during his inspection of quarters. He called for the unlucky victim and said:

"I thought you said your locker was spotless."

"Yes sir, it is. Not a clean spot in it."

SLIM CHANCE

The grand jury was looking into an arson case. For a long time the august group were closeted.

A reporter asked a court attendant, "Is the grand jury sifting the evidence?"

"Not exactly—it's straining it."

An applicant for the local fire department who had a better physique than he had mental powers, appeared before the examining physician.

"How much do you weigh?" he asked.

"I weigh 165 pounds, sir."

"Is that with your coat on?"

"Oh, no. I carried it on my arm."

BRAXMAR BADGES

Standard for Fifty Years

1879 1930

No. 720-F

14K Gold, $35.00

Also Made in Sterling Silver and Rolled Gold

C. G. BRAXMAR CO.

242 West 55th St., New York

"Mathews" Hydrants Raise Fire Fighting Efficiency

No one knows where fire will strike next, or where traffic accidents will smash fire hydrants. But, when a broken hydrant can be replaced in less than half an hour, it is easy to keep all hydrants on duty all the time—ready.

With "Mathews" hydrants, the entire barrel with all parts, is removable through the protection case, and a new hydrant on the job in a few minutes *without excavating or breaking the pavement.*

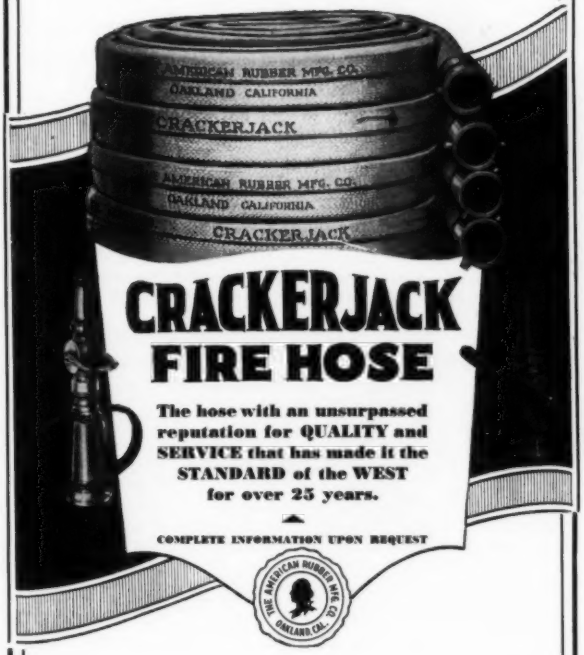
"Mathews" hydrants are frostproof, cannot leak when broken, and are easily adjustable for number, direction and elevation of nozzles. Specify "Mathews"—the leader for 64 years. Write for complete description.

R. D. WOOD & CO.

PHILADELPHIA, PENNA.

ENGINEERS - - IRON FOUNDERS - - MACHINISTS

In business continually since 1803.

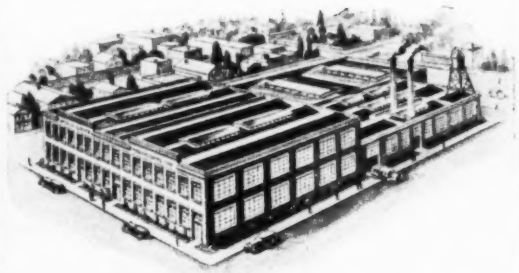


CRACKERJACK FIRE HOSE

The hose with an unsurpassed reputation for QUALITY and SERVICE that has made it the STANDARD of the WEST for over 25 years.

COMPLETE INFORMATION UPON REQUEST

WRITE FOR THE
Crackerjack Fire Ax
MADE OF RUBBER
A Dandy for the Kiddies



THE AMERICAN RUBBER MANUFACTURING CO

Factories and General Offices

OAKLAND, CALIFORNIA

Sales Offices

San Francisco
Matson Bldg.

Los Angeles
458 So. Spring St.

Boise, Ida.
P. O. Box 1432

Portland, Ore.
602 Bedell Bldg.

Kansas City, Missouri
5547 Lydia St.

Salt Lake City, Utah
149 W. Second So. St.

Spokane, Wash.
112 So. Monroe St.

12,000 gallons of water displaced per hour with this siphon.

15 foot lift, 40 pounds pressure at siphon.

3,000 gallons of water used.

15,000 gallons gross, 12,000 gallons net.

A protection to the pumper.

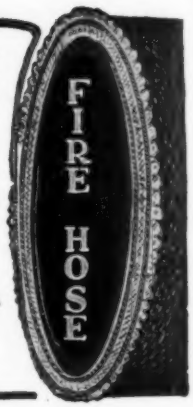
30-Day Free Trial. Write for circular. Over 400 in service.

P-B PRODUCTS CO., Inc.
2155 Blendon Pl., St. Louis, Mo.
D. E. Parks, Pres.

Baker Fabric

Woven and lined to flatten and fold easier, closer and with least injurious effects. Mass-woven to combine maximum strength with flexibility. Write for details.

MANUFACTURED EXCLUSIVELY BY
HEWITT - GUTTA PERCHA
RUBBER CORPORATION
BUFFALO, N. Y.
(Also makers of single and double jacket hose)
"Territories Available"



Here is the Ideal Hose Expander

in design, materials, workmanship and in speed and perfection of operation.

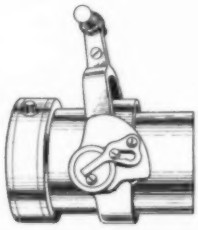
Be sure to get complete information from us before placing your orders for fire hose, extinguishers, roof manifolds . . . or any type of fire department nozzles, hose fittings, hydrant connections, hydrant gates, hose valves, siamese connections, wrenches and other tools, hose racks and reels, and other similar equipment.

Do You Want Full Details?

The A. B. C. Fire Prevention Mfg. Co.
390 Hudson Street, New York City

A·B·C Trade Mark

The SHIFT COUPLER



Built to CONNECT and DISCONNECT instantly!

Any size hard suction

Years of Service Prove it the Best

National Standard Threadless Coupling Corp.
215-217 Beach 122nd St., Rockaway Park, N. Y.

Saves time - *and costly hose*

No. 1. (Capacity 3 to 7 tons; weight, each, 72 lbs.)

No. 2. (Capacity 3 to 12 tons; weight, each, 118 lbs.)

Complete information and Prices on request.

It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.

Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars

Wausau Fire Hose Protector Co.
1520 Harmon Place, Minneapolis, Minn.

You'll Enjoy Every Issue!

You cannot help but derive a great deal of pleasure and real help in your work from every issue of FIRE ENGINEERING.

Why not have it delivered direct to you every other week at a cost of only $3 for the year?

Just fill out the slip below and mail it to FIRE ENGINEERING, 24 West 40th St., N. Y. C., and we will start your subscription with the next issue. Pay for it any time you like within the next thirty days.

Sign Here:

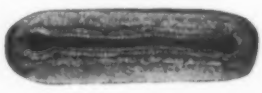
Name .....

Position .....

Address .....

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
Canal St. Station
110 North Franklin St.
Chicago



It is easy to explain why Bi-Lateral Fire Hose is the only successful improvement made in the construction of hose which permits it to be flattened on the modern apparatus without causing rapid aging of the rubber at the points of fold.

Send for descriptive matter.

Causes of Spontaneous Ignition

(*Continued from page* 358)

have occurred. For bagging and similar materials, the oil used in course of manufacture may also enter as a factor. At any rate, some other agency than bacterial growth must account for temperatures high enough to cause ignition, irrespective of whether caused by compounds resulting from bacterial growth, or others initially present but dormant until attaining the higher temperatures produced by bacterial action.

It might be added that up to the present the tests with jute have indicated this material to present a lower hazard from the spontaneous heating or ignition standpoint than materials such as cotton that are generally considered as presenting at the most a low hazard.

Wide Range of Materials and Conditions Considered

We have also made tests to determine susceptibility to spontaneous ignition of materials submitted by the War, Navy and Post Office Departments. In addition, information has been given in response to inquiries from the public covering a wide range of conditions and materials. Very often an answer in the negative could be made from mere consideration of the amount of material present and method of application. Thus some materials used as heat insulation in buildings might heat in a large mass, but in the layers employed could not retain a sufficient amount of the heat developed to produce temperatures approaching ignition. Apparently, in many cases, the choice in cause of fires, as on warships and in Government warehouses, lay between spontaneous ignition and some common cause such as matches or smoking, involving breach of regulations. Inquiries from public prosecutors have indicated spontaneous ignition or arson as the causes being investigated in the case of some specific fires.

Have Had to Qualify Conclusions in Some Cases

Where experiments were necessary and the results were negative, we have generally been obliged to qualify any conclusions made from them because of limitations in equipment, time, and testing procedure. This refers not only to the size of specimen but also the introduction of testing conditions representative of those surrounding the material when and where it was supposed to have caused the fire. We have felt the need for further and more exhaustive work on the general subject, than we have been able to undertake with the limited funds available for our fire resistance work.

Where the test gave a positive result and our testing conditions could be defended as representative of those it was intended to simulate there was no reason for questoning its validity.

Thus, in many railroad mail cars now in use, temperatures nearly up to 100°C (212°F) may obtain adjacent to the steam heating coils, and our tests have indicated that some materials submitted may properly be excluded from mail bags on the score of susceptibility to spontaneous heating at these or lower temperatures. Fires in mail cars have also been caused by materials made with chemicals like carbon disulphide having abnormally low ignition points.

Hazards of Rayon and Artificial Silk

The manufacture of rayon or artificial silk is one of our newest and most rapidly growing industries. Rayon is made from cellulose and during the development period of the industry several processes were used, only a few of which have found extensive application. The fire hazard of the product in various stages of manufacture came up a few years ago, and tests were made on samples representative of the different stages of manufacture and the various processes used. These have now been completed and the results indicate that neither from the standpoint of ignition temperature, nor susceptibility to spontaneous heating, does rayon made by the principal processes now in use, constitute any greater fire hazard than cotton goods, and in some respects the hazard is not as great. No spontaneous heating was developed in any of the tests even where oil representative of that used in its manufacture was added.

The spontaneous heating process may result either in a rise of temperature in the material above its surroundings but not attaining ignition temperature even under favorable conditions, or where the action is more decided, ignition may result, provided conditions favorable in point of air supply and conservation of the heat developed are present. It is important to separate the concept of what constitutes ignition from the heating leading up to it, even if, over a temperature range immediately below gnition or rapid decomposition, it may be difficult to determine where the one ends and the other begins. The manifestations of ignition are, however, generally so decided that the hazards present after it is attained are of an entirely different order. Given material and air supply combustion will go on at increasing rate until it may attain the proportions of a conflagration. From the standpoint of ignition of some materials it is unimportant whether the required temperature is attained from a self-heating process or from heat externally applied over a similar period of time.

Difference Between Phosphorus and Wood

The point may be illustrated for the case of phosphorus and wood. White or yellow phosphorus in a mass of small particles will ignite almost immediately or after a short heating period in air, the lag depending on temperature and humidity, The ignition point of this material is given as low as 45°C. (113°F.). Some, if not all, species of wood in the form of moist sawdust are apparently subject to spontaneous heating when in large mass, that may, under favorable conditions, result in ignition. Should we accordingly on this account place phosphorus and wood on the same basis from the fire hazard standpoint? While both may ignite exposed to air without externally applied heat, the one will do so under almost all conditons while the other requires conditions particularly favorable for the development and retention of heat maintained over a considerable period of time. Placing the proposition on a different basis, the probability that the phosphorus concerned will ignite on exposure to air and set on fire any combustibles in contact with it, is practically 100 percent, while for a given lot of sawdust of undetermined use or destination, the probability of ignition from spontaneous heating can be given as much less than one percent. The lower hazard is due to the special conditions required for initiation of heating, the higher ignition temperature, and the longer time required to reach it, the latter affording greater opportunity for detection and prevention of ignition. In spite of this fortunate difference the conditions producing spontaneous heating which results in ignition occur often enough with a considerable range of materials and combinations thereof to give us the large fire loss charged to this cause.

(From a paper read before the Conference on Heating and Ignition, at Washington, D. C.)

London Firemen Use Masks at Smoky Fire

A serious fire broke out in a paper warehouse, London, England, within a short distance of Ludgate Circus. Many companies and firemen were called. Because of the dense smoke, it was necessary for the firemen to make use of their gas masks.

The Round Table

(Continued from page 366)

fic conditions. We find this assistance on the part of the police department of considerable benefit in carrying out operations at the scene of the fire.

William Coulin, Chief, Hamilton, Ohio: The police department under its present Chief, the Hon. John Calhoun, is co-operating with us in every respect, and more than this we cannot expect.

A. R. Cumming, Chief, Houlton, Maine: It is essential that the police and fire departments be on good terms with each other so that prompt and efficient service may be rendered. Police are ready to aid us in whatever manner they may be needed, and likewise, members of the fire force are always available to assist in tasks other than the extinguishment of fire where their services may be needed.

G. Rehm, Chief, Mobile, Ala.: With relation to co-operation between police and fire departments, I find such to be working in perfect harmony. The police aid in roping off streets at fires, help in salvage work, keep lines of traffic open so that apparatus has clear right of way when responding, etc. Every one works for the good of all concerned.

W. F. Woods, Chief, Portsmouth, N. H.: The police and fire departments of this city work together, rendering assistance to each other whenever required. Police respond with each alarm of fire to maintain fire lines and render whatever help they can. I find this plan of co-operation very beneficial and have nothing more to suggest at this time.

W. C. Shepard, Pittsfield, Mass.: The co-operation between the police and fire departments of this city is of the best. We have installed in police headquarters a large bell and tape, which provides them with all box alarm signals to which they respond. They also respond to telephone alarms when requested to do so. Police rope off the streets and assist in many other ways in and about the scene of the fire. The very best feeling prevails between the two departments. In other words, we work as one unit.

Albert Herring, Chief, Murphysboro, Ill.: The police department can co-operate with the fire department by studying the alarm system and running card of the latter, for the purpose of regulating traffic, and to notify the public of the approach of fire apparatus.

H. A. Whitney, Chief, Adrian, Mich.: This is a subject on which I believe we do not devote enough thought. Would not greater co-operation between these two departments be fostered through some sort of meeting such as a Round Table discussion where subjects relating to both departments could be discussed.

I believe this plan to be a very good one, but do not know just how it would work out in the larger cities.

D. E. Shuford, Chief, Hickory, N. Car.: We have splendid co-operation between our police and fire departments in that a motorcycle officer responds with all alarms. One or more police officers are needed at every fire to prevent interference by motor traffic and spectators.

A. S. Warren, Chief, Dodge City, Kan.: The police department co-operate with us by having an officer assigned to answer all fire alarms. Traffic officer is instructed to handle all traffic in vicinity of fires.

Jeremiah McGill, Chief, Trenton, N. J.: The police and fire departments of the city of Trenton enjoy the closest of co-operation and brotherly consideration.

Louis Locher, Chief, Springfield, Ohio: Better co-operation between police and fire departments can be secured by co-operation of the heads of these departments as well as the members thereof. To meet together in social gatherings and in athletics is another means of bringing about a closer relationship of the departments.

Answers to Previous Questions

John Brammer, Chief, Madera, Cal.: The department is financed by donations from the city general fund and from individuals. A dance is held once each year.

Jeremiah McGill, Chief, Trenton, N. J.: The police and fire departments of the city of Trenton enjoy the closest of co-operation and brotherly consideration.

Louis Locher, Chief, Springfield, Ohio: Better co-operation between police and fire departments can be secured by co-operation of the heads of these departments as well as the members thereof. To meet together in social gatherings and in athletics is another means of bringing about a closer relationship of the departments.

Frank Crakes, Chief, Santa Maria, Calif.: Our city being incorporated, we derive our funds for the department through budget from the regular taxation channels.

In the past we have given dances and held carnivals, and have been successful in some of these ventures, while in other instances, we have hardly been repaid for the effort expended. It takes considerable time of several men in advance as well as during the presentation of such entertainments, and due to the uncertainty of returns, we have discontinued this method entirely.

The men of our department receive but a small monthly salary, which requires that they have regular employment in other lines. This of course made it rather inconvenient for the committeemen to complete some of their details.

Allan H. Clark, Chief, Lakefield, Ont.: Our department is financed entirely out of the general revenue of the town as are the paid brigades. All apparatus, wages of men while on duty, etc., are provided for in the same manner.

We hold a social function once or twice a year, the proceeds of which go to a brigade fund. At one time we used to buy some of our small equipment from this fund, but have discontinued this practice. With regard to raising funds by shows or carnivals, while the effort is often worth it, just a certain percentage of the citizens are willing to help. By financing the department out of the general tax fund, the burden falls on the people who get the services of the department. The fire department is a municipal service and as such the entire population should supply the means of carrying it on.

Max C. Freeman, Chief, Dundee, Ill.: I find the carnival proposition the best means of raising funds to finance our departments. Being a volunteer department of ten, we have raised sufficient funds during the past five years to purchase an eight-box fire alarm system with siren, fire truck and other equipment that was needed.

Albert Herring, Chief, Murphysboro, Ill.: The city of Murphysboro, Illinois, was one of the first cities in this country to adopt fire prevention talks in the public schools. It was a proven fact that by regular inspection of the business district and all buildings located in what is known as the fire limits, we were successful in preventing fires and reducing the fire loss. While we were accomplishing this in the business district, we were still having the regular number of fires in the homes of our people.

In the year 1911 we had 63 defective flue fires which were classed as preventable fires, and which could have been prevented. I have appealed to property owners through the local papers, requesting that they have their flues inspected and offered the services of the fire department free of charge to assist in carrying out such a program. I met with but little success and decided upon the inspection blank method. These blanks were taken to the schools and their purpose explained. The boys were provided with blanks and asked to make a complete inspection of their homes and fill in the blanks, while the girls were asked to write essays. Prizes were awarded to the three leading contestants.

Each year this work is carried out with great success. In 1925 I gathered together such things as would make a good fire prevention exhibit to take before the schools. In this manner it was easier for the children to grasp just what I was trying to put over. This scheme has proven very effective and is being carried out on a larger scale each year.

Two Killed by Fireworks Explosion

The one story plant of the Connecticut Fireworks Company at Northford, Connecticut, a suburb of New Haven, was totally destroyed and two workmen were instantly killed by an explosion followed by a series of sixty of lesser force which shook nearby homes.

Firemen from New Haven and North Haven who answered a general alarm which was sent out a few minutes after the first explosion, were able to prevent a spread of the resulting fire to nearby buildings which also contained explosives. One building, three hundred feet away, was filled with dynamite.

Two of the buildings were in ruins when the firemen arrived and they concentrated their efforts toward preventing further spread of the fire. Both the workmen were blown and burned beyond recognition, the body of the second man being found almost one hundred feet from the building in which he had been working.

THOMAS F. MAGNER.

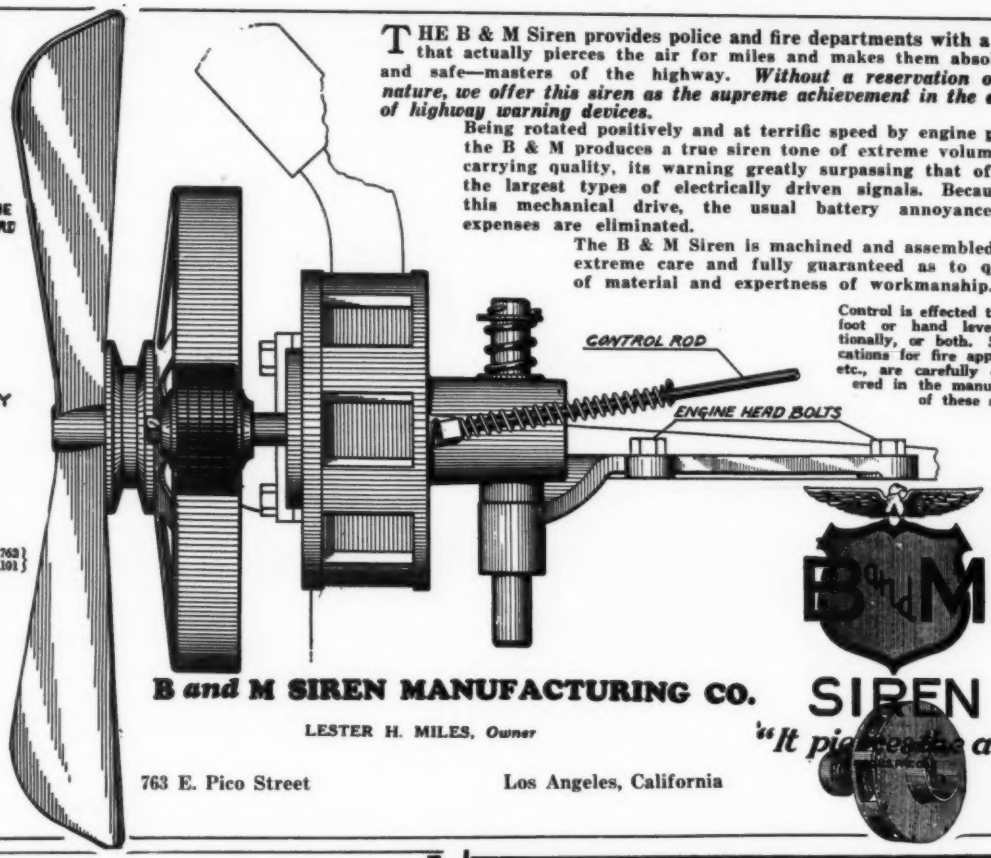
B&M FORD SIREN

MADE TO FIT THE NEW MODEL FORD

PRICE 65.00

COMPLETE WITH DRIVE PULLEY FAN AND BRACKET

PATENTS
{1,566,761 1,566,762}
{1,566,763 1,586,101}
Others Pending



THE B & M Siren provides police and fire departments with a voice that actually pierces the air for miles and makes them absolute—and safe—masters of the highway. *Without a reservation of any nature, we offer this siren as the supreme achievement in the design of highway warning devices.*

Being rotated positively and at terrific speed by engine power, the B & M produces a true siren tone of extreme volume and carrying quality, its warning greatly surpassing that of even the largest types of electrically driven signals. Because of this mechanical drive, the usual battery annoyance and expenses are eliminated.

The B & M Siren is machined and assembled with extreme care and fully guaranteed as to quality of material and expertness of workmanship.

Control is effected through foot or hand levers optionally, or both. Specifications for fire apparatus, etc., are carefully considered in the manufacture of these signals.

B and M SIREN MANUFACTURING CO.

LESTER H. MILES, *Owner*

763 E. Pico Street Los Angeles, California

B and M SIREN

"It pierces the air"

The Clark Inhalator

automatically and unfailingly delivers all the gas called for by the respiration of either one or two victims.

When giving the advanced (7%) treatment, this volume may exceed 60 litres a minute. With this excessive demand coming even from two patients, the supply in a "Clark" never fails and

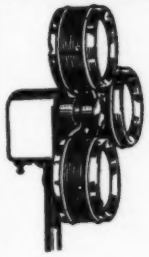
NO GAS IS WASTED

The Clark Inhalator has been Tested and Approved by the Committee on Resuscitating Apparatus for the American Gas Association. This official approval is for the use of the Inhalator on either one or two victims.

Give the victim every chance. The "Clark" does it.

McDonald Engineering Corp.
220 Varet Street Brooklyn, N. Y.

The most Effective Combination of Warning Signals



BUCKEYE "ROTO-RAYS"—A silent signal of unquestioned effectiveness to protect your apparatus and your firemen against accidents.

At night these three revolving red signal lights make identification of the apparatus instantly possible as far as light is visible.

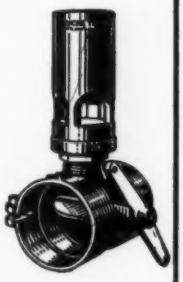
Insist upon having "Roto-Rays" on the next piece of apparatus you buy. It's just as essential as the whistle, the siren or the bell. Easily installed on apparatus now in service.

The Powerful BUCKEYE EXHAUST WHISTLE predominates in over 600 fire departments where serious traffic problems exist.

The shrill blast of a Buckeye Whistle effectively carries far ahead of the apparatus. Its sound is distinctive and extremely penetrating.

"Roto-Rays" and a Buckeye Whistle form the most effective combination of Warning Signals in existence.

Prices and full particulars upon request.



Buckeye Iron & Brass Works
326 E. Third St. Dayton, Ohio

BUCKEYE
WARNING SIGNALS THAT WARN

Let the world's oldest and largest exclusive manufacturer of sirens solve your siren problems.

STERLING SIRENS

You will find in the Sterling line a siren for every purpose.

Sterling engineers are glad to give you their assistance.

STERLING SIREN FIRE ALARM CO., Inc.
61 Allen St. Rochester, N. Y.

BODY GUARD

FIRE FIGHTERS CLOTHING

GIVES real protection and comfort in any weather and at any kind of fire. Designed to permit freedom of action, eliminating cumbersome excess weight. Made of materials that withstand the hardest kind of usage. Bodyguard apparel is used by Firemen everywhere.

BODY-GUARD BRAND

THE BODY GUARD MANUFACTURING CO.
ST. JOSEPH · · MISSOURI

One big whistle with 1930 improvements throwing the sound equally in all directions.

THE BEST MADE, we leave it up to you, your engineers or any good mechanic, and a test.

The decision will unquestionably be the ERICK, designed for the purpose.

For further information address

Erick Electric Siren Co.
State & Fillmore Ave.
St. Paul, Minn.

JACOB REED'S SONS

Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

Write for catalog and prices.

1424-1426 Chestnut St., Philadelphia, Pa.

Hedberg Super Sirens

"The World's Best by Test"

offer the world's greatest and most versatile range of choice involving sizes and methods of operation.

Write for descriptive matter showing sirens that have never lost in competition.

J. N. HEDBERG
321-49 W. REED ST.,
SAN JOSE · · · CALIFORNIA

The High Efficiency of HALE Rotary Pumps is due to:

1 The form of the patented Rotor Tooth.
2 Automatic Packing.
3 Four bearing pump shafts.
4 Stainless steel pump shafts.

The design of Hale pumps has been perfected through fifteen years of active experience, and has resulted in a rugged, highly efficient product.

HALE FIRE PUMP CO., INC.
CONSHOHOCKEN, PA.

Manufacturers of Rotary Fire Pumps.

G

The new Rensselaer Catalog "G" is now ready for distribution. Officials desiring the latest information on RENSSELAER VALVES and COREY HYDRANTS are invited to fill in and mail the coupon below.

RENSSELAER VALVE CO.,
TROY, NEW YORK.

Send Catalog "G" to

Name .....
Title .....
Street .....
City .....

EDDY

Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.

James B. Clow & Sons, Chicago Agents

Your Catalog Page

Fire Protection Equipment and Supplies

1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Caps, Firemen's.
23 Chains, Non-Skid Fire Apparatus.
24 Chassis for Fire Apparatus.
25 Chemical Engines and Tanks.
26 Chimney Cleaning Compounds.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equimpent Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Calcium Chloride.
35 Extinguishers, Carbon Dioxide.
36 Extinguishers, Soda-Acid.
37 Extinguishers, Carbon Tetrachloride.
38 Extinguishers, Foam.
39 Extinguishers, Powder.
40 Fire Boat Nozzle Equipment.
41 Fire Department Supplies, General.
42 Fire Exit Devices, Door Opening.
43 Fire Alarm Posts.
44 Fire Escapes, Portable.
45 Fire Escapes, Rigid.
46 First Aid Equipment.
47 Flare Lights.
48 Flashlights, Hand.
49 Foam Liquid for Extinguishers.
50 Gas Masks and Respirators.
51 Gas & Smoke Helmets.
52 Gasoline & Oil Handling Equipment.
53 Goggles, Firmen's.
54 Helmets, Metal, etc.

Help Yourself!

Whenever you are in the market for new equipment you naturally want to get complete information from all reliable manufacturers before you place the orders for your department.

This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service. Help yourself.

Fire Protection Equipment and Supplies

55 Hose Carts, Reels & Racks.
56 Hose Clamps.
57 Hose, Fire.
58 Hose, Chemical.
59 Hose Holders.
60 Hose Jackets.
61 Hose Standardization Tools.
62 Hydrant Draining Pumps.
63 Hydrants, Fire.
64 Jacks for Fire Trucks.
65 Jacks, Shoring & Prying.
66 Ladders, Fire.
67 Lightning Arresters.
68 Motorcycles, Fire Dept. Equipped.
69 Nets, Life.
70 Nozzles, Pipes & Misc. Brass Goods.
71 Packings, Pumps.
72 Pads, Pole Hole.
73 Paints, Fire Resisting.
74 Priming Ether, Motor.
75 Pumping Cars, Standard.
76 Pumping Cars, Foam.
77 Pumps, Fire Apparatus.
78 Pumps, Fire Service, Stationary.
79 Pumps, Portable for Fire Protection.
80 Record Books, Fire.
81 Relief Valves.
82 Reviving Apparatus, Oxygen.
83 Rubber Clothing.
84 Searchlights.
85 Shingles, Fire Retardant.
86 Shirts, Firemen's Special.
87 Sirens, Apparatus & Chiefs' Cars.
88 Sliding Poles.
89 Soda & Acid Chemicals.
90 Spark Plugs, Fire Apparatus & Motorcyles.
91 Squad and other Auxiliary Cars.
92 Sprinkler Head Shut-Offs.
93 Sprinkler Supervisory Service.
94 Sprinkler Systems, Automatic, Foam.
95 Sprinkler Systems, Automatic, Water.
96 Starters, Fire Apparatus, Automatic, Air.
97 Steam Fire Engines.
98 Tarpaulins & Fire Blankets.
99 Tetrachloride Chemicals.
100 Thawing Equipment, Hydrant.
101 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
102 Tractors.
103 Traffic Clearing Systems.
104 Triple Combination Pumping Cars.
105 Uniforms.
106 Water Towers.
107 Wheels, Cushion.
108 Whistles, Fire Alarm, Compressed Air
109 Whistles, Fire Alarm, Steam.
110 Whistles, Fire Apparatus.
111 Wrecking Trucks.

TEAR OFF HERE

FIRE ENGINEERING, 24 West 40th St., New York City.
As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Date.....

Nos. ..... Name .....

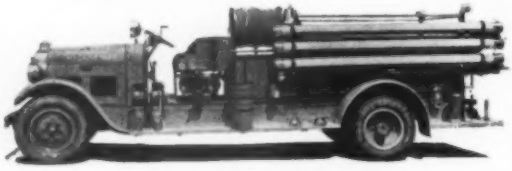
Nos. ..... Position .....

Nos. ..... Street .....

Nos. ..... City and State.....

For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet

4-30



HAHN

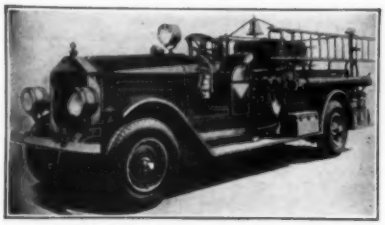
For dependable, efficient service, Hahn apparatus enjoys a most excellent reputation. Triple combination pumpers in all capacities up to 750 gallons, Chemical and Hose Trucks, City Service Trucks and Squad Wagons.

Full information upon request

Hahn Motor Truck Corporation
ALLENTOWN, PA.
20 Years' Experience Building Fire Apparatus

MAXIM FIRE APPARATUS

All Types



All Sizes

If you are thinking of buying new apparatus shortly, be sure to get all the facts about MAXIM before you decide.
Send for complete information
MAXIM MOTOR COMPANY, Middleboro, Mass.
Metropolitan Sales Agents:
The Woodhouse Manufacturing Co., 156 Chambers St., N. Y.

when!

You are interested in Fire Fighting Equipment consult:

BOYER

Builders of equipment to meet your requirements.
Specializing in Apparatus for Rural Fire Fighting.

BOYER FIRE APPARATUS COMPANY
Logansport, Indiana

MORSE
FIRE BOAT EQUIPMENT
Invincible and Callahan Nozzles
Fire Department Supplies

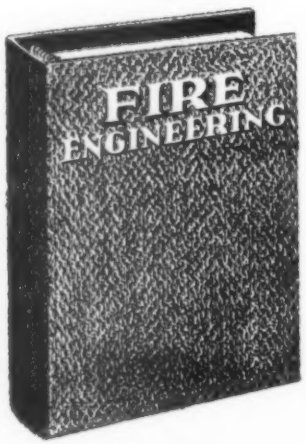
are in use throughout the country and giving unsurpassed service.
Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.
You will find that it pays.
Write for Catalog

Andrew J. Morse & Son, Inc.
221 High St. Established 1837 Boston, Mass.

A Handy Binder

for your copies of

FIRE ENGINEERING



Address
Book Department
CASE-SHEPPERD-MANN
PUB. CORP.
24 W. 40th St., New York, N. Y.

EVERY issue, as you know, is packed full of interesting and authoritative data, ideas, news, etc., that you like to keep handy for ready reference. Why not keep them all together in a binder? You'll find this special one a great convenience. The cost is only $1.75 and many of our subscribers are already using them. What about you?

Name .....

Position .....

Address .....

ADVERTISING INDEX

Advertising Pays—in Fire Engineering

	PAGE
A.B.C. Fire Prevention Mfg. Co.	382
Ahrens-Fox Fire Engine Co.	353
American LaFrance & Foamite Corp.	*Inside Front Cover*
American Rubber Mfg. Co.	381
B. & M. Siren Mfg. Co.	385
Bi-Lateral Fire Hose Co.	382
Body Guard Mfg. Co.	386
Boyer Fire Apparatus Co.	388
Braxmar Co., C. G.	381
Buckeye Iron & Brass Works	385
Clark-Cooper Co.	390
Clay, Inc., John H.	390
Clifton Mfg. Co.	390
Darling Valve & Mfg. Co.	354
Don'tfear Mask Co.	390
Eastman Co., Samuel	390
Eddy Valve Co.	386
Erick Electric Siren Co.	386
Eureka Fire Hose Mfg. Co.	*Front Cover*
Fabric Fire Hose Co.	351
Fulton Bag & Cotton Mills	*Back Cover*
Gamewell Company	356
Hahn Motor Truck Co.	388
Hale Fire Pump Co.	386
Hedberg, J. N.	386
Hewitt-Gutta Percha Rubber Corp.	382
Information for Buyers	**387**
Larkin Mfg. Co.	390
Mack Trucks, Inc.	355
Maxim Motor Co.	388
Morse & Son, Inc., Andrew J.	388
McDonald Engineering Corp.	385
National Standard Threadless Coupling Corp.	382
P-B Products Co., Inc.	382
Reed's Sons, Jacob	386
Rensselaer Valve Co.	386
Sterling Siren Fire Alarm Co., Inc.	386
Union Water Meter Co.	390
Wausau Fire Hose Protector Co.	382
Wood & Co., R. D.	381
Woodhouse Mfg. Co.	390

When Ordering New Equipment

Patronize the Manufacturers You Find Listed Above

They are leaders in their respective lines and are in position to take the best possible care of your requirements.

The fact that they are using advertising space in FIRE ENGINEERING indicates they want your inquiries and will be glad to submit specifications and prices without placing you under any obligations whatever.

They are ready and anxious to serve you courteously in every way possible. Be sure to write them for complete information when considering new purchases—and place your orders with them.

They are helping us make the paper better by their advertising. You can help them and help us and help yourself by giving them your business. Let's all pull together! All will benefit.

The Publishers

JOHN H. CLAY, INC.

1320 Ridge Ave., Philadelphia, Pa.
Established 1864

Clay Automatic Door Opening Devices for Fire Station Doors Opening either In or Out. Save valuable minutes in getting to fires. Send for Bulletin.

New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Ouality.

Over 5,000 Victor Gas Masks in Service

Full Line Fire Dept. Supplies and Equipment

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc.
156 Chambers St., New York
D. A. Woodhouse, Pres. and Gen. Mgr — George J. Kuss, Vice-Pres. and Treas.

COOPER ELECTRO-PNEUMATIC ALARM

In use for Years

Unlimited life

Nothing to get out of order

Powerful—Reliable—Instantaneous

Operates on only 1/10 amount of air required by whistles. Quickest device for coding. May be connected to present system and will operate if power is temporarily off. Produces a powerful and distinct sound audible for miles.

Manufactured by
CLARK COOPER
153-159 Jefferson St. PHILADELPHIA

Clifton Salvage Covers

Are made of strong, heavy duck and lapped seams and are designed of such thickness and weight as to be light enough to be handled quickly and rigid enough for the most strenuous service. They are rubberized on both sides with a double coating of a high grade, long life, rubber compound.

CLIFTON SALVAGE COVERS are built to stand the heaviest abuse and are used by many of the large Protective Departments.

May we send you further particulars?

Clifton Manufacturing Company
Jamaica Plain District :: Boston, Mass.

Always ready for instant use.

For Personal Safety use

DONTFEAR

Smoke and Fume Respirators

Positive protection against smoke, fumes and gases.

Price $5, Goggles $1 extra; Canisters 50 cents

Send for catalogue.

Don'tfear Mask Co.

654 Madison Avenue, New York, N. Y.

LARKIN Fire Department Supplies

in Service Wherever Fires Are Fought

Our general line of equipment includes every fire department supply of merit.

Larkin shut off nozzles alone are in service in over 5,000 fire departments in U. S. and Canada.

Give us an opportunity of quoting on your next requirements. Let us send you our general catalog.

THE LARKIN MANUFACTURING CO.
Established 1898 DAYTON, OHIO

The New Eastman Deluge Gun

The New Eastman Deluge Gun is a Portable Turret Pipe that can be used on the truck or ground, as may be desired. The stream can be operated in any direction by one man.

Samuel Eastman Co.
Concord, N. H.

Fire Alarm Signals
Water Meters
Compounding Valves
Stops
Water Pressure Regulators

Presses for Lining Service Pipe with Cement

Union Water Meter Co., Worcester, Mass.

Incorporated 1868

Three Books

Every Ambitious Fire-Fighter Should Have

Questions and Answers for Lieutenant and Captain

A 290 page book, fully illustrated, by Geo. J. Kuss, Former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

If you are studying for a promotional examination, you need this book, and if you are not studying for examination, this book will nevertheless give you a vast amount of valuable information on up-to-date fire methods.

Price $2.65 Postpaid

Questions and Answers for Battalion and Deputy Chief

A 210 page book, fully illustrated, by Geo. J. Kuss, Former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A valuable book, not only for candidates for examinations for Battalion and Deputy Chief, but for every member of the department. The only book published which gives detailed methods of operating at large fires and the reasons for each move.

The following are a few of the important topics covered:

Detailed description of the proper procedure in fighting fires: 1. Size-up. 2. Calling of help; 3. Saving of life; 4. Covering exposures; 5. Extinguishing fire; 6. Overhauling. How to test motor fire apparatus. How the following types of fires should be fought: Large department stores, large hotels and rooming houses, large area residential fires, combination stores and apartments, motion picture film exchanges, tall office buildings, wholesale grocery stores and warehouses, group building fires, theatres, schools, factories, etc., and considerable other data.

Price $2.15 Postpaid

Simplified Fire Department Hydraulics

A 200 page book, fully illustrated, by Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A complete course of instruction in fire department hydraulics. Designed to prepare fire department officers for hydrauilc questions in examinations, such as required of all ranks.

Contains over 150 problems in fire department hydraulics asked in examination in New York, Chicago, Milwaukee, Seattle, Newark, and a score of other large cities.

Treats fully all departments of fire department hydraulics including pressure calculations, friction loss, engine and nozzle pressures, range of streams, capacities of engines, discharge from nozzles, hydrants, sprinklers, etc., etc.

Price $2.15 Postpaid

Use This Coupon Now to Order Your Copies

Book Department
Case-Shepperd-Mann Pub. Corp.
24 W. 40th St., N. Y. C.

Gentlemen: I am enclosing $.....money order (or check), for which please send me the following:

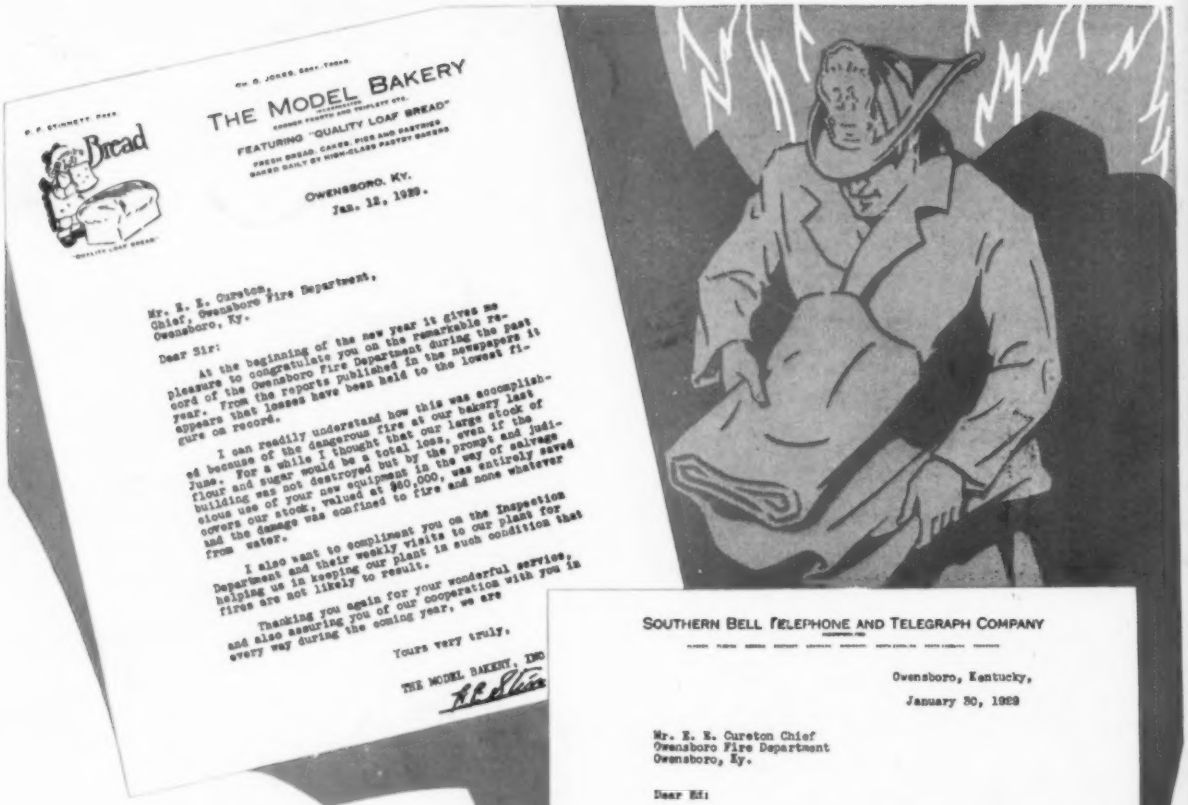
.....Copies of "Questions and Answers for Lieutenant and Captain" at $2.65 each.

.....Copies of "Simplified Fire Department Hydraulics" at $2.15 each.

.....Copies of "Questions and Answers for Battalion and Deputy Chief" at $2.15 each.

Name ..... Rank .....

Address ..... Date.....



THE MODEL BAKERY

FEATURING "QUALITY LOAF BREAD"

FRESH BREAD, CAKES, PIES AND PASTRIES BAKED DAILY BY HIGH-CLASS PASTRY BAKERS

OWENSBORO, KY.
Jan. 12, 1929.

Mr. E. E. Cureton,
Chief, Owensboro Fire Department,
Owensboro, Ky.

Dear Sir:

At the beginning of the new year it gives me pleasure to congratulate you on the remarkable record of the Owensboro Fire Department during the past year. From the reports published in the newspapers it appears that losses have been held to the lowest figure on record.

I can readily understand how this was accomplished because of the dangerous fire at our bakery last June. For a while I thought that our large stock of flour and sugar would be a total loss, even if the building was not destroyed but by the prompt and judicious use of your new equipment in the way of salvage covers our stock, valued at $60,000, was entirely saved and the damage was confined to fire and none whatever from water.

I also want to compliment you on the Inspection Department and their weekly visits to our plant for helping us in keeping our plant in such condition that fires are not likely to result.

Thanking you again for your wonderful service, and also assuring you of our cooperation with you in every way during the coming year, we are

Yours very truly,

THE MODEL BAKERY, INC.

SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY

Owensboro, Kentucky,
January 30, 1929

Mr. E. E. Cureton Chief
Owensboro Fire Department
Owensboro, Ky.

Dear Sir:

Every day since the fire at my residence, I have been intending to write you a letter of appreciation, but first one thing, then another, has kept me from thinking of it when at the office.

When I stepped out on the side walk and looked up at the roof of my house, all covered with smoke and flames, there seemed to me very little chance to save the house, and of course I fully expected that whatever escaped the flames would be ruined by water.

I was therefore, very agreeably surprised when you and your efficient bunch of fellows came, in less than five minutes from the time I called you, and extinguished the fire before it burned into any of my upstairs rooms at all. It was also a revelation to me the way you covered my household goods with tarpaulins and prevented any water damage to my furniture.

Please accept my sincere appreciation, and pass it along to the Boys who fought with you so faithfully. Owensboro citizens as well as insurance companies doing business in the City, have in your organization an asset of incalculable value.

With very best wishes for your continued success, I am

Yours very truly

WDW:f

—*as these letters attest*

Shuredry covers are just as essential to the equipment of the up-to-date fire department as the hose wagon or other apparatus.

Prominent fire chiefs throughout the country endorse "Shuredry" covers as ideal for all salvage work.

They cost less, weigh less and are easier to handle and spread than rubber covers. They do not crack when folded and stored.

Write our nearest plant for samples and prices.

Fulton Bag & Cotton Mills

Brooklyn Dallas St. Louis Minneapolis
New Orleans Atlanta, Ga. Kan. City, Kan.
Manufacturers Since 1870

Minimize Water Damage
—Reduce Insurance Rates

"Shuredry" Waterproofed Salvage Covers

es

S